UNIVERSITÉ DU QUÉBEC À MONTRÉAL

# LIFE-MEDIA FOR A WIRELESS WORLD: PARTICIPATORY DEMOCRACY AND THE RADIO SPECTRUM IN CANADA AND URUGUAY

THÈSE PRÉSENTÉE
COMME EXIGENCE PARTIELLE
DU DOCTORAT EN COMMUNICATION

PAR
EVAN LIGHT

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**Abbreviations and acronyms**

ACRTA: Alliance of Canadian Cinema, Television and Radio Actors
ALER: Latin American Radio Education Association
AMARC: World Association of Community Broadcasters
AMARC-ALC: World Association of Community Broadcasters - Latin America and Caribbean
AMARC-Uruguay
ANDEBU: Asociación Nacional de Broadcasters Uruguayos
APC: Association for Progressive Communication
APU: Asociación de la prensa uruguaya
ARC du Canada: Alliance des radiodiffuseurs communautaires du Canada
ARCQ: Association des radiodiffuseurs communautaires du Québec
AWS: Advanced Wireless Services
BBC: British Broadcasting Corporation
BBM: Bureau of Broadcast Measurement
BBS: Bulletin board system
BPR: Broadcast Procedures and Rules
B-TAC: Technical Advisory Committee on Broadcasting
CACTUS: Canadian Association of Community Television Users and Stations
CBC: Canadian Broadcasting Corporation
CAB: Canadian Association of Broadcasters
CCTA: Canadian Cable Television Association
CFRC: Community Radio Fund of Canada
CHARC: Consejo Honorario Asesor de Radiodifusión Comunitaria (Uruguay)
CNDAV: Comisión Nacional en Defensa del Agua y de la Vida (Uruguay)
COASAS: Comisión Asesora en Agua y Saneamiento (Uruguay)
CNO: Canadian National Organization
CRIS: Communication Rights in the Information Society
CRTC: Canadian Radio-Television and Telecommunications Commission
CWTA: Canadian Wireless Telecommunications Association
DINAGUA: Dirección Nacional de Aguas y Saneamiento (Uruguay)
DINASA: Dirección Nacional de Aguas y Saneamiento (Uruguay)
DINATEL: Dirección Nacional de Telecomunicaciones (Uruguay)
DRB: Digital radio broadcasting
DRCG: Digital Radio Co-ordinating Group
DTV: Digital television
EFF: Electronic Frontier Foundation

FCC: Federal Communications Commission (USA)
FFOSE: Funcionarios de Obras Sanitarias del Estado (Uruguay)
GMS: Grupo Medios y Sociedad
GPS: Global positioning system
IACHR: Inter-American Commission on Human Rights
IC: Industry Canada
IDRC: International Development Research Centre
IEEE: Institute of Electrical and Electronics Engineers
IELSUR: Instituto de Estudios Legales y Sociales del Uruguay
IMF: International Monetary Fund
ISF: Île sans fils
ITU: International Telegraph Union / International Telecommunications Union
ITU-R: International Telecommunications Union, Radiocommunications Sector
MERCOSUR: Mercado Común del Sur
MDS: Multipoint distribution television broadcasting
MIEM: Ministerio de Industria, Energía y Minería (Uruguay)
MTS: Manitoba Telephone System
NASA: National Aeronautics and Space Administration (USA)
NCRA: National Campus and Community Radio Association
NSG: National Study Group
NGO: Non-governmental organization
OECD: Organization for Economic Co-operation and Development
OLPC: One Laptop Per Child
OSE: Obras Sanitarias del Estado (Uruguay)
PIAC: Public Interest Advocacy Centre
PCS: Personal Communications Service
TPRP: Telecommunications Policy Review Panel
TWU: Telecommunications Workers' Union
UHF: Ultra-high frequency
UNESCO: United Nations Educational, Scientific and Cultural Organization
URSEC: Unidad Reguladora de Servicios de Comunicaciones (Uruguay)
WIPO: World Intellectual Property Organization
WTO: World Trade Organization

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**Résumé et mots clés**

Le spectre radioélectrique est rapidement en train de devenir *le* médium central, à travers lequel la société communique. Grâce à de multiples facteurs, plusieurs formes de communication, anciennement disparates (la radio, la télévision, la téléphonie mobile, le Wi-Fi) convergent vers la forme éthérée du spectre. L'orientation future de cette convergence dépend largement des acteurs qui sont impliqués dans le design de la réglementation de la communication, ainsi que dans celui des technologies et de leurs usages. Cette thèse doctorale élabore une histoire compréhensive de la communication sans-fil et de sa réglementation, et propose une nouvelle économie politique du spectre, fondée sur la justice sociale. Elle présente, par la suite, une approche épistémologique qui tente de recalibrer les relations entre la société et le spectre radioélectrique. Elle propose que le spectre devra être traité comme une sorte de « média de vie », étant donné qu'il est une composante naturelle de notre environnement et qu'il occupe un rôle central dans notre habilité à exister comme des êtres sociaux communicants. Sa réglementation, alors, devra être sujette au plus haut niveau de participation, de transparence, et d'imputabilité.

Cette recherche repose sur une étude de cas internationale et comparative. Elle aborde la capacité des processus de « policymaking » au Canada et en Uruguay à intégrer la participation publique. Elle se fonde sur une documentation extensive et des entretiens avec des législateurs, des régulateurs nationaux et internationaux, des organisations de la société civile, des experts indépendants, des ministères du gouvernement, et des représentants du secteur privé. Des diagnostiques sont établis pour chaque pays et des recommandations politiques concrètes sont faites, qui ne parlent pas seulement des spécificités des politiques du spectre, mais du tissu même de la société démocratique.

**Mots-clés :**
spectre radioélectrique ; politiques de communication ; télécommunication ; Canada ; Uruguay

## Abstract and Key Words

The radio spectrum is rapidly becoming *the* central medium through which society engages in communication. Due to a variety of factors, formerly disparate forms of radio communication (radio, television, cellular telephony, Wi-Fi) are converging around the ethereal form of the spectrum. The future orientation of this convergence depends greatly on the actors involved in the design of communications regulation, technology and of its uses. This thesis details a comprehensive history of wireless communication and regulation while constructing a new political economy of the spectrum built on a foundation of social justice. It then presents an epistemological approach that attempts to recalibrate society's relationship with the radio spectrum. I propose that the spectrum, in that it is a natural part of our environment and occupies such central role in our ability to exist as communicative social beings, must be considered a form of "life-media". Its regulation thus must be held to the highest level of participation, transparency and accountability.

The research project is built around an international comparative case study and examines the capacity for public participation in spectrum policy-making in Canada and Uruguay. It relies upon extensive documentary evidence, interviews with law-makers, national and international regulators, civil society organizations, independent experts, government ministers and representatives of the private sector. Diagnostics are rendered concerning each country and practical policy recommendations are made that speak not only to the specifics of spectrum policy but to the very fabric of democratic society itself.



**Keywords:**

radio spectrum; communications policy; telecommunications; Canada; Uruguay

**Preface**

Before plunging into the big story, I feel it is important to explain to you what I am doing here and how I arrived. Much more than an academic exercise, this work is the culmination of over 20 years of thought, work, play and happenstance.

My interest in the radio spectrum and communication technology dates back to childhood when a good-natured oldies radio DJ took mercy on an 8-year old Beatles fan and invited me to co-host his program. Then, in the late 1980s my family purchased a personal computer and I plunged into a new world of technology and unfettered communications as both a user and builder of bulletin board systems (BBSs). In these pre-internet days, when one computer would call another across the Atlantic to make a "mail drop," it was still possible to build your own "net" on your own time and according to your own rules. Indeed, there was not yet an accessible internet to tap into. In 1993, I took my first information technology (IT) job helping to lay the physical infrastructure for one of the first large-scale fibre networks – a project that linked multiple hospitals, doctors' offices and an insurance company. Before the Web became worldwide, we had built our own. That same year, I got a broadcast license from the Federal Communications Commission (FCC) and became a college radio DJ, driving out into the Pine Barrens of New Jersey to WLFR (Lake Fred Radio) every week and beginning, in earnest, the long trajectory by which I have arrived here today. Radio communications and wired communications, broadcast and broadband. These invariably conflicted themes of enquiry made themselves known long ago. While historically separate, they have had an unusual tendency to converge around me. As I demonstrate in the thesis you are about to read, I am not unique, this process of convergence is taking place around all of us.

In 1995 I moved to Montréal where I pursued a BA in English at McGill University and more IT work, this time helping to rebuild the physical infrastructure of the university computer network. Four years later I would immigrate and become the network technician of the McGill University Faculty of Law and again, by chance, take part in a cutting-edge technological project. This time I developed Canada's first fully wired university library. I continued to be involved in radio as a programmer and editor and joined CKUT Radio's board of directors as a representative of McGill's support staff. It was during this time that my interest in communications policy began to grow.

Finally, in 2004 I decided to return to university and began my *maîtrise en communication* at UQAM with a desire to turn a constructively critical eye on community radio. Invited by Professor Carmen Rico de Sotelo to undertake a research internship in Uruguay, I made my first of many trips there in 2005. I returned to the region that same year to the Summit of the Americas and Peoples' Summit, this time in Argentina, as part of a delegation of community radio journalists from Québec organized by the World Association of Community Broadcasters (AMARC). In the years following, I dove into the deep end of communications policy advocacy, serving on the board of the National Campus and Community Radio Association where I helped establish the Community Radio Fund of Canada and, coincidentally, met my wife Joanne! In 2006, I attended the 9th world conference of AMARC in Amman, Jordan where I began to understand the potential for activist-academic policy collaboration on an international scale and to further understand my role as an academic and as a citizen.

Throughout my years working with independent and alternative media, I have met

people from all over the world who wish to be able to communicate freely (free of censorship) and independently (of governments and corporations) and who see the airwaves as integral to this ability. Community radio, community television and community wireless internet groups are the three main groups that set about this task in an organized fashion. In my experience, however, I noticed that while they may be organizing around a common theme and utilize a common natural infrastructure (the spectrum), there is little collaboration among these groups with regards to spectrum policy. Thus, one goal of this research – which will be developed more substantially throughout – is to develop the idea of the spectrum as a common focal point around which these groups can orient themselves more collectively. Likewise, I will use this same model to illustrate the centrality of the spectrum to society in general and to question the highly privatized and centralized models upon which we have built our communication systems.

Four years ago, I told Jeremy Schtern, then a doctoral candidate in communication at the Université de Montréal, that I wanted to write things about communication policy that were enjoyable to read. Laughing, he told me in all seriousness that such a thing was not possible. By drawing the policy straw, we were doomed to a future of well-mannered observation and dry, humourless analysis. That said, it is my sincere hope that this work brings about more laughs and gasps than yawns and that it may be enjoyably used as a tool for enduring positive social change.

## Chapter 1: Spectrum stakes

### 1.1 Spectrum stakes

This first chapter of six lays out a distinct strategy for interrogating the radio spectrum and our relationship with it as communicative social and political beings. It addresses a number of concepts which will be considered within certain national contexts – in this case Canada and Uruguay – throughout the following chapters. Part one examines the notion of the spectrum itself. What is this thing and why does it matter? What is at stake when we talk about the future of the spectrum? Part two considers the concept of convergence and the potentials that present themselves in this current cycle of technological and political shape-shifting. Convergence exists in many forms. Here, I focus on the tripartite convergence of broadcasting, telephony, and internet. Part three illustrates the epistemological limitations of past work on the radio spectrum. Bound by notions of economics and technology, it is necessary to discover new conceptual space in which to consider the reconstruction of our social relationship with the spectrum. I propose that we can look to the natural world, and to certain social movements that have successfully mobilized around it, to help devise new strategies around thinking about the spectrum in a manner meant to be relevant to citizens, activists, academics and policymakers alike.

#### 1.1.1 What is the spectrum?

What is the radio spectrum? Given the prevalence of radio-based communications technologies in the world today, this may seem a silly question with an obvious answer. The response I received from many of my interview subjects (whom you will meet in Chapters 4 and 5) is perhaps similar to what you are thinking: the airwaves. Radiation. Signals. Frequencies. OK, but what are these airwaves you speak of? What *is* the spectrum? In this section, I briefly trace the historical development of the

concept of the "spectrum" from the 1800s to the present. The historiography pinpoints moments in time when the spectrum has been understood in different ways, depicting moments of legal, technical and economic enclosure as well as moments of technical, social and conceptual opening. The answer to my leading question is actually quite slippery. Indeed, as we shall see, it is both a legal and technical construct and nothing at all. Here, I will focus primarily on describing the history of the spectrum and the ways we go about regulating it and thinking about it. In later chapters, I will shift my attention to the various processes by which the spectrum is defined and given form.

Throughout much writing concerning the spectrum, a variety of literary tropes are employed in order to impart material qualities to this immaterial thing. This discursive strategy imposes upon the spectrum symbolic and practical delineations that are founded on objects of comparison more so than on the spectrum itself. Perhaps most often, the spectrum has been understood as something akin to land and has over time been subject to similar debates concerning the idea of property. That said, our comprehension of the spectrum has changed greatly since its "discovery" in 1887 by Heinrich Hertz (Aitken, 1985, p. 29). I propose that this evolution can be organized and understood as a series of historical periods similar to Lewis Hyde's documentation of changes in English society's relationship with land with particular attention paid to the place of common land tenure (2010, p. 29).

1. Saxon age (pre-Norman conquest): All village lands were owned and worked in common.
2. Post-Norman conquest: Lands became associated with a local manor by royal decree. Tenants were given rights to work the land in exchange for any number of tributes: a portion of crop and honey production, military servitude,

working the manor's lands.

3. 18th-19th century: This was the Age of Enclosure during which 1/7 of all common English land was converted into private property.

The much shorter history of the spectrum (or rather, our technical ability to interact with it) can be divided into seven historical periods. Some of these periods overlap; the first is uniquely ahistorical and literally serves as the foundation of all the others.

### 1.1.2 The eternal age of the natural spectrum

Most histories related to the spectrum detail its use and the constitution of various legal frameworks related to its use rather than concern themselves with the spectrum in and of itself. Typically they begin at the end of the 1800s and early 1900s with the invention of the wireless telegraph and eventually broadcast radio – the first examples of transmitting electronic signals over air for the purpose of communication (Douglas, 1987; McChesney, 1993a; Peers, 1969; Raboy, 1990a; Winseck, 1998; Winseck & Pike, 2007). The spectrum, however, has existed forever. It describes the potential of space (the space in which air exists rather than the air itself) to transmit energy (Simon, 2010). This potentiality and many of the types of energy that exist within it were around long before we began to create energy of our own in the form of "radio waves". Energy presents itself in various forms: heat, light, naturally occurring radiation and magnetism. However, it is all the same stuff. Radio waves existing within the radio spectrum are simply a subset of the entire electromagnetic spectrum that have historically been utilized for radio communication. Indeed, all the energy that exists within the spectrum can be referred to as electromagnetic waves and is central to the very atomic makeup of our bodies and our entire physical environment. Electromagnetic waves are composed of energy that is imbued with both electric and magnetic properties and create electromagnetic fields. These fields interact to

generate light that in turn interacts with our eyes, nervous system and brain, bringing us vision. (*Feynman*, 2007) Physicist Richard Feynman has shown that these same fields exist and interact within the atoms that are the building blocks of our world in a way that keeps both the atoms and the things they are a part of unified in form (Feynman, 1965, chap. 1). This conceptualization of the spectrum, originating from the field of physics, explains how energy is transmitted and received as well as the integral relationship that naturally exists between humans, our environment and energy. The light-based illustration lends itself easily to metaphor, the sun emitting light (like a radio transmitter) which is received by the eye (like a radio receiver that converts one type of energetic signal into something audible). This relationship is easy to illustrate, explain and understand. As we shall see, it has played an important role in reinforcing a conceptualization of the spectrum that is dominant, even across oppositional schools of thought. The second part of this explanation of the spectrum and the role of electromagnetic energy as a building block for all existence (living and not) is absent from spectrum-related writings outside the field of physics, with the exception of a variety of energy-related healing arts. A natural commons, the energy that makes up the spectrum is effectively self-regulating and self-managing just as an untouched forest cares for itself (a preceding state of English common land tenure which Hyde negates). The eternal age of the natural spectrum is decidedly ahistorical as it did not originate nor will it end with human intervention. Reconceptualizing the spectrum in these terms could alter the manner in which we use and regulate it.

### 1.1.3 The age of exploration

In 1752, Benjamin Franklin conducted a classic experiment where he flew a kite in a storm, charging a Leyden jar[1] from the kite string (Aitken, 1976, p. 86). This was the

1 A Leyden jar was a type of early capacitor in which static electricity could be stored.

beginning of experimentation with electricity in a quickly industrializing society. Roughly 100 years later, James Clerck Maxwell would mathematically prove that light and electricity were knit of the same electromagnetic cloth (Aitken, 1976, p. 21; Maxwell, 1865). The period of time between 1865 and 1896 would be one of great experimentation and exploration. As with astronomy before space travel, it was as if a new world had been uncovered into which we could begin to peer. "Man now knew that the radiofrequency spectrum existed; he had developed ways of gaining access to it and locating himself in it; and he was beginning to grasp the fantastic range and variety of its possible uses" (Aitken, 1976, p. 27). While other researchers such as Maxwell had proved the theoretical existence of electromagnetic energy, Heinrich Hertz set out to prove this in practical terms. In 1887 Hertz built two devices. One, the spark-switched oscillator, propagated electromagnetic radiation. The other, called a resonator, measured this energy. Using the two devices together, Hertz determined a method for measuring the spectrum and thus both quantifying it and illustrating its existence (Buchwald, 1994, pp. 217–292). To continue the earlier analogy, this period was akin to humankind's first steps toward industrial forestry, pondering the uses of the land while becoming familiar with the terrain and creating tools with which to work it. The basis of measurement developed by Hertz (measuring the oscillations of waves of electromagnetic radiation) continues to be used today. While the range of energy that is possible to measure has increased (thus the advent of megahertz and giga-hertz) the basic measure of radio waves has remained the same. The importance of Hertz's act of measurement, and delineation, was its foundational role in charting out humankind's social relationship with the spectrum. While not necessarily a goal of Hertz, from this time forward, humankind's relationship with the spectrum -- insofar as it is used in conjunction with communication technology -- has been strictly defined, measured and controlled.

### 1.1.4 The first age of spectrum enclosure

The year 1896 marks the initial step in the first age of spectrum enclosure. After decades of unfettered experimentation by scientists around the world, Guglielmo Marconi filed British patent No. 12,039, the first intellectual property rights claim to radio technology (Aitken, 1976, p. 115). While several of Marconi's claims would be eventually overturned in a 1943 lawsuit (U.S. Supreme Court, 1943), the importance here is that he staked a claim causing a flood of other radio-related patents to be applied for in the United States and the UK in the coming years. Before the granting of this first patent, it could be said – at least legally – that the science of radio was purely experimental and exploratory. From 1896 onward, it gained a new orientation and began to chiefly concern itself with the use of radio waves for communication and thus the creation of signalling systems, new inventions and patents, and commercial applications of these new technologies (Aitken, 1976, pp. 115–225).

Technological advances were followed by State regulatory efforts with little delay. As Susan Douglas has noted, this early history of radio constructed the technical, economic, legislative and ideological foundation upon which the following history of radio communications has been built (Douglas, 1987, pp. 315–317). International coordination of the airwaves and the relevant national legislation began in 1903 with the first International Telegraph Union (ITU) conference dedicated to the radio spectrum. This "Preliminary Conference Concerning Wireless Telegraphy" produced guidelines stipulating that stations should operate without causing interference with other stations (Martinez, 1985, p. 100). Participating in this first conference were State and military representatives from Germany, Austria, Spain, the United States of America, France, Great Britain, Hungary, Italy and Russia (International Telegraph

Union, 1903).

Three years later, in 1906, delegations from 30 nations negotiated the first Radiotelegraph Convention (commonly referred to as the Berlin Convention) – the world's first treaty related to wireless technology and governance of the electromagnetic spectrum (Martinez, 1985, p. 100). Thomas Streeter's analysis of these events notes that the Berlin Convention was mainly a strategy by the American and German governments to prevent Marconi from fully monopolizing the technology which they, as governments, wanted to use to communicate wirelessly (1996, pp. 76–77). It is important to state that the conflict here was not over whether the spectrum would be free for the unfettered use of humankind, but rather who would control this use, by what means and to what ends. While several more nations were included in this early stage in the development of spectrum policy and technology, participation remained limited to federal governments and their respective militaries (International Telegraph Union, 1906). To be clear, these were meetings not of the entire ITU but a subset of parties concerned with wireless telegraphy use. Initially founded in 1865 to deal with wire-line telegraphy, the ITU effectively had two operating bodies – one dedicated to the use of the airwaves, the other to wired networks. Telecommunications corporations had been active members in the ITU since 1871 when they began to participate in creating policy around wire-line telegraph transmission rates and service regulations (International Telegraph Union, 1872a). In 1912, corporations began to directly participate in wireless debates, too (International Telegraph Union, 1913).

During this same period in the early 1900s, spectrum regulation on the national level was introduced in a seemingly coordinated fashion. Not two months after the ITU's

first conference on the subject, New Zealand passed the first spectrum-related legislation in the world, the *Wireless Telegraphy Act* of 1903 (Government of New Zealand, 1903) which "protected the government's investment in the new "wireline" telephone and telegraph networks and was also intended to manage the radio spectrum to avoid interference" (New Zealand, 2006). The UK followed suit with the *Telegraph Act* of 1904 (Aitken, 1976, p. 161), followed by Canada's *Wireless Telegraph Act* of 1905 (CRTC, 2008). Examination of Parliamentary debates in Canada and the UK at the time show little concern for the including the public in any part of the discussion. The notion of regulation in the public interest -- often addressed in later discussions regarding broadcasting -- is here invoked upon initial presentation of Canada's first wireless act in the House of Commons. Upon the first reading of the proposed *Wireless Telegraphy Act* in Canadian parliament, then Minister of marine and fisheries, Raymond Préfontaine, stated that a telegraphy act developed by the Fessenden Wireless Telegraphy Company "was redrafted almost entirely on the lines of the law passed in England in 1904, so as to protect the public interest. The object of this bill is therefore to give the government control of wireless telegraphy in such a manner as to ensure the greatest efficiency, and to obtain the greatest benefit to the public interest." Préfontaine also stated that "this bill is almost an exact copy of a Bill passed by the British parliament last year for the regulation of wireless telegraphy in Great Britain." (Government of Canada, 1905). The notion of the public interest, seen through the lens of British parliamentary debates concerning this legislation, specifically related to the ability of the public to access commercial communications networks. These bills and the *Canadian Radiotelegraphy Act* of 1913 (Parliament of Canada, 1913a) made the federal government the central controller of spectrum regulation.

In essence, the first enclosure of the spectrum was undertaken through a combination of intellectual property law (patents) and State regulation (the introduction of licensing). Thus, the trajectory of spectrum-oriented research and thinking -- the *epistemology* of the spectrum, if you will -- substantially shifted from one of exploration to one of utilitarian creation, particularly for commercial, military and governmental use (Streeter, 1996, p. 223).

### 1.1.5 The age of regulation

The initial development of radio technology focused on point-to-point communications and was primarily concerned with conveying messages for military, governmental or commercial purposes. The Marconi Company was one of several private enterprises that developed around the world to serve these purposes. However, it would be the advent of broadcast radio that propelled the spectrum literally into the living rooms of the world. Broadcast radio was generally introduced in one of two manners. In the United States, for instance, it was developed as a primarily commercial pursuit, relegating any idea of non-profit or amateur broadcasting to the fringes (Streeter, 1996, pp. 59–63) In Canada, the Marconi Wireless Telegraph Company of Canada became the country's first broadcaster, receiving an experimental license in 1918 (CRTC, 2008). The decision of the UK to create a state monopoly for radio broadcasting – the British Broadcasting Corporation – led to a tension in British-influenced Canada between private and public interests (Raboy, 1990a, pp. 17–47). Ultimately the first Canadian federal study on broadcasting – the Aird Report – would recommend the creation of a similar state monopoly here, subsequently reflected in the 1932 *Broadcast Act* (Aird, 1929; Raboy, 1990a, pp. 27–29).

Early radio-related legislation had not anticipated broadcasting of any sort and this new industry largely made its own way, pushing at the regulatory limits of governments and ultimately warranting the creation of specialized regulatory bodies. Thus, the emergence of two sets of regulators can be observed: one set managed the section of spectrum used by wireless telegraph and another, appearing slightly later, managed broadcast radio (and eventually television). This initial split in the treatment of the spectrum for point-to-point communication (later to evolve into telecommunications) and broadcasting has had lasting effects on regulatory approaches. Several countries (such as Canada, Nigeria and Uruguay) still have specialized spectrum regulators, resembling the early ones noted below, which manage the spectrum based principally on technical standards.

| Year | Country | Regulator |
|---|---|---|
| 1903 | New Zealand | Governor in Council |
| 1904 | UK | Post Office |
| 1905 | Canada | Department of Marine and Fisheries |
| 1912 | US | Secretary of Commerce and Labour |
| 1913 | Uruguay | General Administration of Mail, Telegraph and Phones |

**Table 1.1: Early wireless regulators**

Broadcast radio was largely regulated by the above organizations until it was decided that such a complex medium of great potential economic and social value warranted specialized legislation and regulation. In response, the Federal Radio Commission was created in 1927 by the *U.S. Federal Radio Act* (Streeter, 1996, pp. 96–97). In

Canada, the *Canadian Radio-broadcasting Act* of 1932 mandated the creation of the Canadian Radio Broadcasting Commission (Raboy, 1990a, pp. 21–47). The UK federal government maintained an absolute monopoly on radio broadcasting until the 1970s and spectrum regulation remained as a technical pursuit -- the Post Office managed the use of frequencies for telecommunications without subjecting the users to extensive evaluation. As the British Broadcasting Corporation maintained a Parliament-granted monopoly on radio broadcasting, the task of the regulator was to ensure that other no other broadcasters inside or outside the UK interfered with their signals (Government of United Kingdom, 1949). In some other countries, Uruguay for example, management of the spectrum is quite opaque and highly politicized; in this case all licenses have always been awarded by presidential decree (Light, 2011, p. 56).

During this same early period of regulation, the use of the spectrum for point-to-point communication was largely left unregulated with the exception of the administration of frequencies, a situation which remains largely unchanged to this day regardless of technological changes. The ITU broadened its regulatory claim in 1932 to include more than telegraph or airborne communications, defining the term telecommunications, for the first time, as:

> any telegraph or telephone communication of signs, signals, writings, images, and sound of any nature, by wire, radio, or other system or process of electric or visual (semaphore) signalling (Leinwoll, 1979, p. 141).

While wireless communication was largely dominated by commercial and state interests, it also gave rise to amateur (or ham) radio which itself would revolutionize

radio communication.

After World War I, many veterans who had been radio operators returned home with new-found knowledge and quickly set to work improving existing techniques for point-to-point radio communication. While in the United States they were legally bound to operate within the 1.5 mHz range, enforcement mechanisms and tools had not evolved to the extent of being easily utilized and thus the "hams" were left largely to operate as they saw fit. Indeed, rather than be persecuted for operating out of their designated frequency range, their skills were so highly regarded that they were asked to cooperate with government radio research in Canada, Italy, France, the UK and the United States (Leinwoll, 1979, pp. 105–115). Through building an amateur scientific community and openly sharing experiment and design information, amateur radio operators in the 1920s created what is known as shortwave radio, a technique of radio communication that permits stations to potentially broadcast across the globe (Leinwoll, 1979, p. 115). Eventually, radio communication corporations took notice and began to further develop this communication method having realized that shortwave radio utilized frequencies that allowed for reliable transmission year-round while those used by wireless telegraph were less reliable during warmer seasons (Leinwoll, 1979, p. 137). While the important early radio experiments and discoveries were made by professional scientists, this is the first example of radio technology being appropriated by citizens or "amateurs" for the non-commercial practice of communication.

Perhaps due to the important presence of radio and television in the psyche of the industrializing world, the method by which these sorts of broadcasting licenses (but not other wireless licenses) were awarded in the United States would later be the subject of market-based regulatory proposals (Coase, 1959; Herzel, 1950). This

period marks an important conceptual split, recognized in regulatory structure and treatment, between the use of the spectrum for broadcasting (which would later include television) and the use of spectrum for point-to-point communications (which would later become an important part of telecommunications).

### 1.1.6 The early age of spectrum propertization

It is often said that the notion of the public interest was and remains a guiding principle in the regulation of broadcasting in North America. Marc Raboy notes that "the U.S. *Broadcasting Act* of 1927 (...) provided for government control over channels, licensed for limited periods, and deemed the guiding standard for licensing to be "public interest, convenience and necessity" (Raboy, 1990a, p. 6). The definition of the "public interest", however, is difficult to pin down given that "the public" necessarily consists of various stakeholders, some of whom may have competing interests. Thus, in order for the interests of these various stakeholders to be taken into account, a regulatory system must be able to facilitate effective and informed participation from as wide a range of perspectives as possible (Buckley, Duer, Mendel, & O Siochru, 2008, pp. 6–9).

The idea that communications regulation is to be carried out in the public interest speaks to certain expectation of the State apparatus to be aware of and attentive to its citizenry. As such, this phrase evokes the ideal of a highly functioning democratic system, something absolutely positive and acceptable in democratic terms. Research on the origins of this approach to regulation in the 1920s, though, tends to overlook important subtleties that indicate a high level of responsiveness of the State to corporate – rather than citizen – interests and are often congratulatory rather than critical (McChesney, 1993b). The events leading up to the creation of the Federal

Communication Commission in the U.S. illustrate an early ordering of political and economic influence, a demonstrated divide in the regulatory treatment of corporate and non-corporate actors. In 1912, the U.S. became the first jurisdiction in the world to introduce private broadcasting. Previously reserved exclusively for military use, "private users demanded access for purposes of radio telegraphy" and it was granted in the *Radio Act* of 1912 (Hazlett, 1990, p. 135). While the Department of Commerce was charged with regulating the spectrum, it had no tools for enforcement and general chaos ensued (Hazlett, 1990, p. 135). In 1923, Secretary of Commerce Herbert Hoover introduced a political tool for creating order by dividing American radio stations into three types: high, medium and low power. "The high-power stations were owned by AT&T, GE and Westinghouse while the low-power stations belonged to universities, churches and labor unions" (Douglas, 1987, pp. 315–316). Hazlett has demonstrated how, during this time, a veritable free market in radio licenses operated whereby broadcasting permits and their accompanying apparatus were regularly bought and sold (Hazlett, 1990, pp. 143–144). Ultimately, the Federal Radio Commission was created in 1927 to introduce more substantial order into the country's broadcasting system and proceeded to develop a system of "competitive hearings" to select broadcasters "based on various criteria deemed to be important to the "public interest"" (Hazlett, 1990, p. 136). This bureaucratic system did not eliminate a market for radio stations and licenses, but instead turned the initial act of obtaining a license into a political process rather than a simple economic one.[2] This is often determined to be the first formalized introduction of the public interest principle into communications regulation and, since this time, the connection between broadcasting regulation and the public interest has been enduring.

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2 It is still common practice in the U.S. and in Canada for stations and their accompanying frequencies, facilities and staff to be bought and sold.

Between 1950-1964, three articles by three different American authors were published that directly challenged use of the public interest normative framework in spectrum allocation. As Eli Noam has noted (Noam, 1997, p. 462), these ideas were again mobilized in the late 1960s and early 1970s (DeVany, Eckert, Meyers, O'Hara, & Scott, 1969; Levin, 1971). While they seemingly lay dormant for many years, the ideas in these articles still resonate today, affecting the ways in which the spectrum is thought about and spoken of as well as the legal and political processes that structure our technologically-mediated relationship with it. Leo Herzel, Ronald Coase and Ayn Rand each contributed something unique to the argument that market economics should be the foundation for the attribution of rights to utilize the radio spectrum. The importance of these individuals lies in the fact that they took a model for spectrum regulation that was previously practiced in a largely informal manner and reformulated it such that it has not only endured but has become common and formal regulatory practice around the world.

In his seminal article ""Public Interest" and the Market in Color Television Regulation" (1950), Leo Herzel vented a certain frustration with the slow pace at which the Federal Communications Commission (FCC) in the United States developed a regulatory framework for color television.[3] Hearings on the subject, he noted, began "as early as 1940" and by 1949, the Commission was still engaged in basic rule-making (1950, p. 802). The complexity of this undertaking was due to the fact that it was not simply focused upon the technical aspects of television broadcasting and receiving, but upon "rules, regulations and standards, as will best serve the public interest, convenience or necessity" (Herzel, 1950, p. 803). For Herzel, the decisions the FCC makes concerning spectrum management are, above

3 Herzel's article was the first documented proposal for applying property rights to the spectrum.

all, economic decisions, not ones concerned with traffic management (1950, p. 809). To introduce what he believed to be a neutral economic standard into an arbitrary process, he recommended that we "abandon regulation by government fiat altogether and substitute the market within the standard of public interest, convenience or necessity" (Herzel, 1950, p. 811).

Ronald Coase later re-presented Herzel's argument, refining and elaborating the evidence upon which it was based more than the conceptual argument itself. Coase clarifies a key aspect of Herzel's proposition, the presupposition that the spectrum will be and should only be used by commercial interests, that "there is no reason why users of radio frequencies should not be in the same position as other businessmen" (1959, p. 30). An accompanying summary of an exchange between Herzel (then a law student) and Dallas Smythe (former chief economist of the FCC) makes evident the seriousness of this proposition. While Smythe presents an argument for a complex system for frequency allocation that takes into account the various social uses and needs such as public safety (Coase, 1959, pp. 15–16), Herzel and Coase insist that introducing such ideas simply made for long-winded, inefficient decision-making processes. If the primary objective of spectrum management was to reduce or prevent interference, it would be in the interest of "the market," but not necessarily the State, to do so as efficiently as possible (Coase, 1959, p. 25).

Shortly after Herzel and Coase began to question the rationale of spectrum allocation in the United States, Ayn Rand stripped their arguments down to the bare essentials (Rand, 1964, 1966, pp. 117–124).

> Any material element or resource which, in order to become of use or value to men, requires the application of human knowledge and effort, should be private property – by right of those who apply the

> knowledge and effort. (...) This is particularly true of broadcasting frequencies or waves, because they are produced by human action and do not exist without it. What exists in nature is only the potential and the medium through which those waves must travel. (Rand, 1966, p. 1)

Rand continues to make the case that, following the "discovery" of the spectrum America's legislators should have passed a new version of the *Homesteader's Act* of 1862 which defined the size of land one could claim but did not define which piece of land one could or could not have and what one could do with it (1964, pp. 2–3). From the get-go, those who could gather the necessary technical or economic resources to stake a claim to a segment of the spectrum should have been permitted to do so. Her arguments are compelling and her insistence on exclusive ownership and use has been replicated in debates over spectrum management and even in spectrum management practices. The debate has consistently centred on the question of how the space within which this energy can exist – this potentiality – is allocated and utilized. As we will see, Rand's determination that singular private ownership be attributed to designated airwaves has been put into practice to varying degrees through the auctioning of spectrum for telecommunications use. During an auction, a specified section of the spectrum is granted to an entity (most often a corporation) for exclusive use. While in most cases such auctions pertain to licenses for a limited number of years, in the case of Canada it is rare for them not to be renewed (Industry Canada, 2010b). In other jurisdictions, for example in Guatemala, a public interest regulatory framework has been completely abandoned in favour of wholesale private ownership and market-based trade of the spectrum (Ibarguen, 2003).

For Rand, private property rights are the foundation of all other rights and she argues that government oversteps its bounds in creating "public property" as opposed to leaving spaces for "private property" to naturally emerge (1964, p. 6). With this, she

introduces an important question which has not yet to been pursued outside the pirate radio movement and certainly not by members of any policy community. How exactly did government gain the ability to define the spectrum as property of any sort, be it public or private?[4] While Ayn Rand has not typically been regarded as an important figure in communication studies, it is worth considering the influence she may have had on the development of economic scholars with whom she collaborated. Most important among them for the current discussion is Alan Greenspan, Chairman of the Federal Reserve of the United States from 1987-2006 during which time legislation was introduced that permitted the auctioning off of the radio spectrum. The economic effects of this are significant: Snider has shown that the spectrum auctioned in the United States during this period has a valuation of $480 billion (2007). While I have not found explicit documentation of Greenspan's influence over the introduction of spectrum auctions in the United States, it seems logical that his financial planning would take into account a set of potential governmental transactions of this magnitude. His relationship with Rand, however, has been well documented and he has credited her directly with extending his understanding of economics to take into account the complex effects of economics on society (Greenspan, 2008, pp. 51–53; Rubin, 2007).

This early property rights approach to spectrum management has been discounted as one that is irrationally narrow and that ignores the evident complexities of spectrum use (Streeter, 1996, pp. 245–255). Its enduring effects are two-fold. Firstly, this approach employed the comparative material object of land to explain the immaterial spectrum. Doing so made it possible to propose the imposition upon the spectrum of a material-oriented property rights regime. Secondly, proposing that the decision-

4 This question will be examined in Chapter Two.

making concerning spectrum attribution be undertaken at a high economic level likely limited the pool of potential spectrum users to an economic (and very likely corresponding political and/or social) elite. Accordingly, it would be the role of government to create a space in which these elites can, amongst themselves, manage the spectrum by economic means. While arguments for spectrum property rights, especially those of Rand, are couched in a discourse of rugged individuality and a citizenship built outside the State, managing the spectrum in such a way provides no space for the implication of the citizens (as opposed to market actors) whose interest these ideas claim to be concerned with.

### 1.1.7 The untethering

The period of time from the late 1940s-1990s was one of incredible growth and change in communication technology and regulation. The importance of this period in terms of the conceptual evolution of the spectrum has as much to do with ideas of enclosure and the creation of property, or 'propertization', as it does with resistance to enclosure and the growth of social movements oriented around claiming the spectrum as public property. I refer to this period as "the untethering" due to the formation of broad radio-oriented social movements and the emergence of spaces for independent communication tethered neither by cables nor laws and due to the emergence of increasingly mobile communication technologies that permit us to engage in point-to-point radio communication seemingly at all times.[5]

The airwaves have been alternately appropriated and reserved for public use since the early days of radio. MacLennan has traced unlicensed broadcasting by non-

5 That said, a large part of cellular telephone networks consists of wired networks. While it could be technically feasible to build an actual point-to-point cellular telephone system, such a thing would be grossly inefficient using existing technology (Simon, 2010).

professionals in Canada to the 1920s and 1930s (MacLennan, 2010, pp. 35–49). In the United States, the concept of listener-sponsored non-commercial radio began with the founding of radio station KPFA and its accompanying Pacifica Radio Foundation in San Francisco, California, in 1949 (Fairchild, 2001). This type of broadcasting differs from public/state and commercial broadcasting in that it is oriented around and largely funded by the immediate community. Additionally, local communities often control and produce programming content. Public/state broadcasters such as National Public Radio/Public Broadcasting Service in the United States, the Canadian Broadcasting Corporation in Canada and the British Broadcasting Corporation in the UK serve local, national and international audiences. They are professional broadcasters with no mandate to provide direct media production access to non-professionals. Community-based radio stations in Latin America developed around the same time as American stations and generally originate from two traditions. In 1947, Radio Sutatenza was founded in Colombia and set the stage for the development of what is now a substantial network of educational radio stations throughout Latin America, embodied in the organization of the Latin American Radio Education Association (ALER). Then, in 1952, 26 mining community radio stations in Bolivia formed a network as a functional and fundamental part of labour organizing and social resistance (Langlois, Sakolsky, & Van der Zon, 2010, p. 24; Robledo, 1998). Pirate radio stations—unlicensed and often clandestine—broadcast across Europe during the 1970s and 1980s in an effort to provide alternatives to state-monopoly broadcasters (Collectif, 1978).[6] This movement ultimately resulted in the official authorization of local community and commercial radio stations (Sánchez, 2003).

6 While documented in Canada much earlier, the phrase "pirate broadcaster' is often associated with these European stations which broadcast from boats anchored in international waters. The origin of the term "pirate radio", however, has been traced to descriptions of the tendency of powerful commercial American radio stations to broadcast into Canada atop the frequency of legitimate Canadian commercial radio stations in the 1920s (MacLennan, 2010, p. 35).

Today, there are thousands of community radio stations around the world with many of them represented by the World Association for Community Broadcasters (AMARC).

Within this long history of community or independent broadcasting, there are two opposing views that, at their root, are concerned with the legitimacy of the State in regulating the spectrum.[7] Typically, those who identify as community broadcasters have gained or seek to gain regulatory legitimacy while those who identify as pirate or unlicensed community broadcasters neither seek recognition from nor recognize the regulatory legitimacy of the State in this domain. Thus, there remains considerable debate even within these movements over regulatory authority and whether or not the "public property" of the airwaves can be legitimately regulated. In addition, the ability to build one's own radio transmitter – something that individuals within both branches of this movement promote – introduces the concrete reality that it is possible to use the radio spectrum "on your own terms."[8] The great number and worldwide presence of these kinds of radio broadcasters are evidence of a persistent view of the spectrum as something that really does qualify as public property and should be used by the public in order to communicate. The fundamental question, it seems, is one asked earlier: who controls the spectrum, by what means, and to what ends?

The advent of communication satellites has been the linchpin of other radio-related technologies that have greatly affected our ability to be untethered communicators

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7 These sorts of media are often explored within various rubrics: alternative media, independent media, citizens' media, etc. For the sake of simplicity, I will use these terms somewhat interchangeably and employ them sparingly.

8 Pirate radio building: http://www.freeradio.org/ and building for licensed community radio: http://prometheusradio.org/

while maintaining location-based awareness – namely the cellphone and global positioning systems (GPS). While the appropriation of radio broadcasting for licensed or unlicensed community use was an important step in enlarging the discursive space around the spectrum, this type of broadcaster is typically organized around a very specific geographic location (Fairchild, 2001). The location-based awareness introduced through cellular telephones and GPS means that while one may have the sensation of being truly untethered, one's communication device is in constant contact with a third party (often the corporation providing you with your means of mobile communication) that can "see" where you are. Thus the allocation of the spectrum and regulation of its use take on another dimension whereby these acts dictate not only methods of communication, but the limits of personal privacy in a spatial sense as opposed to a communicational sense (as in the case of wiretapping).

In the 1920s, theoretical work was conducted on the potential for launching satellites from Earth and putting them into orbit (Samama, 2008, p. 19). The first published proposal for building such a system did not appear until Arthur C. Clarke's *Extra-Terrestrial Relays* in 1945 (Clarke, 1945). In this article, Clarke ponders how one could build a radio network which would be able to service the entire world and points to orbital satellites as a replacement for enormous networks of cables. Development of the various components needed to create communications satellites was conducted largely by AT&T in the United States in the 1940s-1950s and in 1946 the U.S. Army Signal Corps engaged in the first example of extraterrestrial radio communication, bouncing radar signals off the moon and detecting them on Earth (Leinwoll, 1979, p. 189). As demonstrated in David J. Whalen's book on the origins of satellite communications, this technology was subsequently used as a Cold War foreign policy tool by the American government and the National Aeronautics and

Space Administration (NASA) (2002, pp. 10–11). In addition, military development of radar (an acronym for "radio detection and ranging") in the early 1940s would set the stage for Earth-to-space satellite communications (Leinwoll, 1979, pp. 166–170).

GPS is a satellite-based continuation of radio-based naval navigations systems that had been in constant development since the early 1900s. An initial version of GPS, the TRANSIT system, was made operational by the United States Navy in 1964 and became the Global Positioning System in 1973. GPS finally became functional and available for commercial applications in 1995 (Samama, 2008, pp. 1–24). Today, it is a standard feature in basic cellular phones (so one can be found in case of emergency), smart phones (so one can find one's way around town), in military operations and in automobiles. Whereas the spectrum is innately placeless, it is subject to certain strategies that impose the structure of place upon it. National and international regulators often create technical delineations for it that coincide with national borders and certain parts of the spectrum are often reserved for particular uses. GPS uses the spectrum in a way that creates a very precise construction of place. Often integrated into cellular telephones and automobiles and not always operating with the knowledge of the user (Vjayan, 2011), GPS "exacerbates issues around privacy, consent, and the circulation of personal knowledge by potentially allowing for real-time tracking and thus an always-locatable subject" (Propen, 2006, p. 135). This potential for ubiquitous surveillance has developed alongside post-2001 anti-terrorism legislation and its use to surveil individuals has been met with important legal challenges in North America and Europe (Jacoby, 2006). Today, GPS is operated by the United States Air Force (Zeffiro, 2006) and a separate system, called Galileo, is operated by the European Space Agency (European Space Agency, 2011).

While the locations may be different, satellites rely on the same fundaments of radio communication as any other point-to-point radio communication technology. Due to the fact that they orbit the Earth and thus have the potential to utilize the spectrum in countless locations, satellites require a high level of international coordination through the ITU where both the use of frequencies and spatial orbits (of which there is a limited number) are allocated (Kane, 2008, pp. 192–199; Martinez, 1985, pp. 53–83). The use of satellites to provide a range of communication tools (for example, satellite radio and television, as components in internet and cellphone networks, GPS) has heightened the presence of spectrum-related technology in our society. However, the displacement of policy discussions in this area to a strictly international arena of experts (Martinez, 1985, p. 53) means that citizens have few opportunities to take part in decision-making around the use of the spectrum. The level to which the military has been involved in the development and deployment of satellite technology demonstrates a further displacement of policy discussions and increased militarization of the spectrum, a process that began with the wireless telegraph. The issue of democratic access to policy-making and regulatory processes will be examined more fully throughout the following chapters. It should be noted, however, that with each successive technological innovation in wireless technology the possibility of democratic policy-making and regulation appears to diminish even as these new technologies are touted as having great democratizing potential.

As a tool for untethering, the cellular phone has been hailed as a communication technology of great democratizing potential, making the possibility of ubiquitous communication a reality for people throughout the world. The impact has been especially powerful in locations that lack pre-existing telecommunications infrastructures. For instance, recent data shows that two out of three households in

Kenya own a cellphone – twice the number that have access to piped water. In contrast, only one percent of the population has a fixed-line telephone (Rice, 2010). Far from a tool developed expressly for the developing world, though, the cellphone has its roots in that earlier icon of North American mobility – the automobile – and was limited to an elite and wealthy population for decades (Klemens, 2010, pp. 42–49).

While there is an unusual dearth of historical treatments of the cellphone, Guy Klemens' recent book on the subject shows how early experiments in mobile voice communication began with police communication systems in the United States between 1920-1940.[9] Eventually, AT&T introduced the first mobile phone system in St. Louis, Missouri in 1946 and the market for this technology had grown to 1.5 million users by 1964. During the same period, mobile phone development was also taking place in Sweden and Japan. While the technology of this period did offer a certain mobility, one needed an automobile and several thousands of dollars to take advantage of it (Klemens, 2010, pp. 42–49). Ultimately, the first cellphone would be made available to the public in Tokyo, Japan followed by Finland (1982), the United States (1983) (Klemens, 2010, pp. 65–70) and Canada around the same period (Zschoch, 1997, p. 64).

Rough measurements show that there are 4.6 billion cellphone subscriptions serving the world population of approximately 7 billion people and predict that most countries will eventually attain a cellphone penetration rate of 100% (International Telecommunication Union, 2010a, p. 197).[10] The rise of the cellphone has been

9 An engineer, Klemens documents, in fine detail, the evolution of cellphone technology.

10 The penetration rate is determined by the ratio of cellphones to people. Several countries currently have penetration rates of over 100%, but this does not necessarily mean that 100% of the inhabitants own and use cellphones. Individuals may have multiple phones or SIM cards.

accompanied, in many countries, by a gradual shift in the way that spectrum is managed by government bodies. For instance, in the late 1980s the United States held a series of unsuccessful spectrum lotteries to determine which companies would receive the right to use portions of the spectrum for provision of cellphone service. "Over 320,000 lottery tickets were acquired by spectrum speculators" who often proceeded to sell their randomly-attributed asset at great profit (Snider, 2007, p. 1). Following public outrage at private profit being made directly from sale of the "public airwaves", legislation in 1993 that introduced a system to auction the spectrum for telecommunications use, thereby assuring that proceeds of spectrum sales would go directly to the federal government rather than into private hands (Snider, 2007, p. 1). New Zealand became the first nation to auction their airwaves in 1989 (New Zealand, 2011) while Canada's first spectrum auction took place in 1998-1999 (Industry Canada, 2011b). Since 1994, auctions have also been implemented in the following countries: Austria, Belgium, Czech Republic, Denmark, Germany, Greece, Guatemala, Israæl, Italy, Mexico, Netherlands, Nigeria, Slovenia, Switzerland, Taiwan and and the United Kingdom (KB Enterprises LLC, 2009, p. 11). Thus, while the attribution of the radio spectrum for radio and television broadcasting use remained based on evaluative systems that took into account the effects of such decisions on social, political and economic systems while providing participatory forums where the public could intervene, attribution in telecommunications was reduced to a "for sale to the highest bidder" rationale.

Several decades after the property rights approach to spectrum management was first proposed, it has become a widely used in telecommunications. This is set to escalate due to a confluence of factors that are leading to a dramatic shift in both the capabilities of wireless technologies and the structure of our communication and

media system. On an international scale, national communication regulators are migrating their over-the-air television broadcasting systems to digital broadcasting systems which will function on different frequencies than those used today. Commonly referred to as the "digital dividend," the spectrum that will be vacated by the migration will be reallocated for other uses. In the United States and Canada, regulators have decided that it will be allocated for next-generation cellular telephony. The American auction of this spectrum took place in 2008 (Labaton, 2008) while the Canadian auction has been scheduled for 2013 (Theckedath & Thomas, 2012). The auctions taking places in these countries are orchestrated by governments and limited to the use of spectrum for telecommunications. Elsewhere, the conversion of the spectrum into private property was epitomized in the Guatemalan government's decision in 1996 to completely privatize the spectrum under their jurisdiction. Consequently, anybody in Guatemala is free to sell, lease and otherwise manage it as they like (Ibarguen, 2003).

I have referred to the historical period from the 1940s-1990s as "the untethering" because of the brisk development and socialization of wireless communication devices and the growth of related social movements. Individuals and their communities increasingly engage in communication practices that rely on the radio spectrum. They can build their own radio transmitters and receivers and participate in community and pirate broadcasting while their voices are bounced between communication satellites and cellphone networks, ultimately passing through their bodies and those of their neighbours. During this same period of untethering, administrative processes for allocating and managing the spectrum have been constructed far from the public eye. Our untethering has been matched by enclosure, a regulatory acceptance of property rights in the ether. As originally proposed by

Herzel and Coase, administrative processes have been streamlined through the implementation of spectrum auctions and the reduction of spectrum allocation to simple monetary exchange. For many people, this may be just fact, part of the logical progression of our greater socio-economic and political systems. As we will see in the following section, however, a movement of different tendencies has been growing, bolstered by new ideas around spectrum management and new technologies that accompany these ideas.

### 1.2 The new commons era

The model of the commons is being continually adapted and presented as an alternative spectrum management framework. This is similar to the adaptation of material-oriented property rights to the spectrum proposed by Herzel and Coase which was later put into regulatory practice by various national governments. The origins of this model lie at the intersection of the open-source software movement, legal theory and an important technological advance – wireless networking.

Wireless networking (commonly known as Wi-Fi) was developed in the early 1990s and in 1994 Carnegie Mellon University became the first institution to make it available, eventually expanding their wireless network to the entire university campus in 1999 (Carnegie Mellon University, n.d.).[11] Wi-Fi takes advantage of a portion of the spectrum that has historically been sectioned off for unlicensed use. This means that the people using it don't need governmental permission to do so. In most countries, there exists a set of standards to which the equipment, not the users, must adhere. Initially, this part of the spectrum was used by things such as television remote controls and garage door openers. The ability to use this unlicensed spectrum

11 As a comparison, in 1999 McGill University's Nahum Gelber Law Library was the first university library in Canada to offer universal *wired* connectivity.

space to connect computers to networks (for instance, the internet or a university network) or to each other led to the potential to adapt this technique in order to build unlicensed networks of varying scale. Epistemologically, it has opened conceptual space for considering that our centrally regulated wireless communication networks could exist in a similar decentralized, unsupervised and unlicensed fashion.

Radio – whether it be broadcast radio, television, satellite, cellular phone or telegraph – has historically been governed according to one central preconception: radio communication can only be successful if the sender and receiver utilize the same frequency. This need to exclusively use a portion of the spectrum is fundamental to the notion of scarcity that drives much thought and policy concerning the spectrum. It is, however, a limitation of the technology being used rather than of the spectrum itself. A useful analogy is a highway with multiple lanes. More than one vehicle can use each lane and drivers may change lanes depending on where they are going, their designated priority in the legal schema that governs their interaction, etc. Ultimately, drivers may change lanes multiple times but reach their destinations having negotiated various acts of resource sharing in order to get there. Traditional approaches to spectrum regulation rely upon exclusivity – the notion that a designated entity has exclusive permission to transmit on a specific frequency. However, the possibility for successful radio communication to occur through the use of varying frequencies (the transmission changing frequencies as a car changes lanes) was demonstrated as far back as the 1940s and a patent pertaining to such a mechanism was filed in 1942 by Hedy Markey and George Altheil (Markey & Antheil, 1942).[12] Commonly referred to today as "spread spectrum," this technique later became the basis of secure U.S. Navy communications in the late 1950s (Weinberger, 2003).

12 Known widely as screen actress Hedy Lamarr, Markey received the Electronic Frontier Foundation (EFF) Frontier Award in 1995. Online: http://www.ncafe.com/chris/pat2/index.html

In the 1990s these ideas would percolate into popular practice as wireless networking technology for the consumer-market. From 1994-1995, two authors, working independently of one another, proposed that contrary to popular opinion and regulatory practice, the spectrum had no actual limits other than ones that existed due to the capabilities of technology to efficiently utilize it. As technology improves, more of the spectrum can be used more efficiently (Baran, 1995; Gilder, 1994). Baran, in particular, noted that analogue television broadcasting utilized an inordinate amount of spectrum and proposed that it be moved entirely to cable, thereby freeing that part of the spectrum (known as UHF) to be used by more efficient communication technology. By using the very sort of technology introduced by the U.S. Navy in the 1950s, it would be possible to build a boundless and wireless communication system requiring little regulation. These authors presented arguments based on technical feasibility and Eli Noam would shortly afterwards support their claims, albeit qualifying that there must be economic incentive for such a system to work (Noam, 1997). In contrast to claims that spectrum scarcity is but a temporary technical limit, Noam argues that:

> with open access, scarcity emerges, the resource needs to be allocated, and a price mechanism becomes essential. Technology is not enough. But this does not require exclusive control over a slice of the rainbow. (Noam, 1997, p. 463)

These arguments demonstrate the broad range of the debate at the time: while these propositions were being made, spectrum auctions were simultaneously introduced around the world. With neither the requisite technology, legal frameworks nor economic models available, these were not mere shouts in the wild. By 1995, Canada had begun to consider moving television and radio broadcasting to digital

broadcasting technology capable of more efficiently using the spectrum (Canadian Heritage, 1997; Groupe de travail sur la mise en oeuvre de la radio-diffusion audionumérique, 1995a). In addition, what had begun as military radio communication technology would come to be attached to a concept that is key to this technology's functionality, despite its military origins rarely appearing in dominant discourse from the mid-1990s to the present. This is the concept of sharing, an act which implies at the very least a process of negotiation and, to a higher degree, collaboration.

In 1997, legal scholar Yochai Benkler presented the first extensive analysis of the place of sharing in new information and communication technologies, examining then-emerging technologies, testing the compatibility of existing legal frameworks with the concept of open access and interrogating the model of economic priority (1997). The alternative Benkler presents against a backdrop of administrative licensing and property rights frameworks is the following: machines can manage themselves if we give them the ability to do so. Benkler proceeds to engage with the property rights/market model, concluding that the elaborate economic and technological systems needed to "assemble and sublet" the spectrum for use in an unlicensed yet monetized manner is grossly inefficient. Thus, it is more sensible, even from the point of economic efficiency, to create a basic rule-set by which technology can interoperate without the burden of economics-related bureaucracy (Benkler, 1997, pp. 73–76).

Benkler's proposition was further advanced by Kevin Werbach. Similar to Benkler, Werbach advocates for a technologically-enabled spectrum commons that would be shared among users rather than exclusively assigned to companies (Werbach, 2001,

pp. 1–2). These users are, effectively, technological devices that negotiate amongst themselves the best ways to share limited spectrum space. While Werbach's primary focus is presenting viable technical mechanisms for creating a spectrum commons on a large scale, other authors take great inspiration from the open-source software movement that relies upon an ethos of sharing (in this case, ideas and programming code) as an organizational foundation for collaboration.[13] Lawrence Lessig's *The Future of Ideas* presents the traditional systems of spectrum management as crucial obstacles to be overcome in the battle to ensure the freedoms to communicate and innovate (Lessig, 2002). Sharing, the result of a cognizant negotiation between two or more parties over the common use of some thing, is a running/prominent theme throughout Benkler's writings on both the spectrum and collaborative production (Benkler, 1997, 2003, 2004, 2006; Benkler & Nissenbaum, 2006). While much of this academic work pushed at the limits of both technical and epistemological feasibility when initially presented, it has had an continuing effect on the ability of civil society groups to develop viable alternatives with sound legal and technical grounding. Most importantly, it drew critical attention to practices of collaboration and valourization into the open, pointing to them as models to be respected and replicated rather than dismissed as marginal phenomena.

In the background of this academic work (and coincidentally not referred to by any of it) a great deal of both technical and regulatory experimentation was undertaken by Dewayne Hendricks.[14] With the mid-90s characterized by a technological jump to high-speed internet connectivity both in the home and at the enterprise level, Hendricks set out to make the open spectrum approach -- proposed theoretically by

13 This thesis has been produced using 100% open-source software: Ubuntu Linux, OpenOffice, LibreOffice, Firefox, Zotero, Audacity.

14 Known as "The Broadband Cowboy," Hendricks has unfortunately left little documentation of his exploits.

Baran and Gilder -- a reality. Finding the American regulatory climate problematic for building high-speed wireless networks, Hendricks went on to work with interested sovereign nations in North America and elsewhere. Beginning work with Native American communities in North Dakota, he continued to build large-scale unlicensed wireless networks for other communities in New Mexico and the governments of Mongolia and Tonga (Hurtig, 2002; Rennie, 2007). Hendricks' practical work demonstrates that it is possible to build unlicensed wireless communications networks on a large scale if the conditions of political will are appropriate.

What Hendricks, Benkler, Lessig, Werbach and others are arguing for is the creation of a spectrum commons. As with the oft-used analogy of the common management of grazing lands, a spectrum commons would be a system of spectrum management whereby "anyone can gain access to a block of spectrum or a set of channels, subject only to certain basic rules" (Hatfield, 2003, p. 5). Proponents of this approach to the spectrum tend to talk about what sorts of technologies or policies may make such a thing possible. The bigger questions – and the more unknown/hazy/variable factors that must be addressed in order for any change to be made -- are social and political. Academic experts on the spectrum rarely articulate the normative claims upon which their propositions may or may not be based; they do not necessarily connect their academic curiosity and production to concrete efforts to affect change in the policy arena. However, operating in parallel to this community of experts, a variety of community-based groups and NGOs have been working to advance goals connected to the idea of a spectrum commons while engaging their communities in the process.

Since the introduction of Wi-Fi and the theoretical innovation of the spectrum commons, three interrelated community-based models for providing wireless internet

connectivity have emerged. First among them is the community wireless network. These groups commonly take advantage of Wi-Fi technology in order to provide free wireless internet access to local communities, largely through "hotspots" provided in local businesses and public spaces. The first community wireless networks were started in San Francisco, Seattle, British Columbia, Champaign-Urbana (Illinois) and London (Middleton & Crow, 2008, p. 420). One of the most highly developed in Canada is *Île sans fils* in Montréal. Between 2004-2007, *Île sans fils* (ISF) "created a network of over 150 Wi-Fi hotspots; with backhaul bandwidth donated by local businesses and community organizations that provided free WI-Fi to people using laptops in publicly-accessible areas" (Powell, 2008, pp. 60–61). The group of people behind ISF developed an open-source application so other groups around the world could more easily start their own community wireless networks.[15] Community wireless networks can be seen as the forerunners of broader wireless communication movements. The development of open-source software coupled with an organizational model for providing free access demonstrates that basic access to the telecommunications infrastructure does not necessarily need to be based on commercial transactions.

Mesh networks are the second model to emerge from the melding of commons-based theory and technical creation. Different from the previous model, mesh networks (sometimes referred to as free networks) attempt to attain the same level of internet connectivity (in other words, market penetration) as commercial telecommunications companies. The strategy relies on individuals to share their personal internet connections with their neighbours in order to create a larger shared network. One of the most successful, FunkFeuer Free Net in Vienna, Austria, covers the entire

15 Wifidog. http://www.wifidog.org

metropolitan area (2.2 million people) and is active in three other cities.[16] Another, Guifi.net, covers 6,000 kilometers of Catalonia, Spain and provides free internet access to more than 16,000 locations.[17] To my knowledge, a viable mesh network of this scale has not yet been implemented successfully in North America. One project, Wireless Nomad, attempted to develop a similar organization in Toronto, Ontario but failed due technical and market-oriented difficulties (Wong, 2008).[18] Large-scale mesh networks carry the work of community wireless networks to the logical next step: shared or free access to wireless internet in one's home rather than simply around town.

While community wireless networks and mesh networks work at the local level to change the dominant corporation-customer model of telecommunications, their efforts are largely limited to internet access. The third spectrum-focused movement that has emerged in recent years proposes a new paradigm for managing use of the entire radio spectrum – a model referred to as open spectrum management. Emerging from the same theoretical and technical work on the spectrum commons as described above, advocates of open spectrum management aim to extend this approach to wireless telecommunications. As with much of the work on the concept of a spectrum commons, advocates of open spectrum management tend to put the onus on technology to negotiate how to cooperatively use the spectrum most efficiently. Granting such primacy to technology, though, further displaces the politics of the spectrum as the standards according to which technology functions are created by either elite professional bodies, such as the Institute of Electrical and Electronics Engineers (IEEE) (responsible for the Wi-Fi standard among others), and industry

16 FunkenFeuer. http://www.funkfeuer.at/index.php?id=42&L=1
17 Guifi. http://guifi.net/en
18 Wireless Nomad. http://wirelessnomad.blogspot.com/

consortia, such as the International Wireless Industry Consortium (Mansell & Silverstone, 1996).[19] [20] Thus, the rules by which technologies function do not necessarily have any democratic relationship with the people who use them. Potential for sharing both the spectrum and the power of policy-making and regulation lies in the extension of rule-making to the very communities using the technology. In this sense, the scale of the community involved in sharing the spectrum is variable – it may be One Laptop Per Child computers (OLPCs), a community-owned cellular phone network, or a network of community-owned cellular phone networks.[21] With the exception of the above models of wireless community networking, open spectrum management today remains a fringe proposition seemingly originating in academia in a manner not unlike Hazlett and Coase's market-based proposal. The advocates of this new approach, though, are not economists of a more socialist stripe. In addition to the legal scholars noted earlier, they include David P. Reed, one of the original architects of the internet, and philosopher David Weinberger, for whom the spectrum is much more than simply electromagnetic waves: it is our primary connection with the greater technological, social, political and economic world.[22] [23] As such, we should all have equal access to it.

Some analysts of this approach fear that unmanaged or unlicensed use of the spectrum will lead to a "tragedy of the commons" whereby certain users would be able to take

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19 Institute of Electrical and Electronics Engineers. http://www.ieee.org

20 International Wireless Industry Consortium. http://www.iwpc.org/

21 The One Laptop Per Child program is aimed at providing children in developing countries and their school systems with laptops. The laptops communicate through one another in order to share a limited number of internet connections. Uruguay is the only country that has fully deployed laptops and wireless networking to all of its primary schools.

22 http://www.reed.com/dpr/?sel=OpenSpectrum/

23 http://www.greaterdemocracy.org/framing_openspectrum.html

and use however much they wanted to the detriment of others (Hatfield, 2003, pp. 9–10). As I will demonstrate throughout this dissertation, however, such criticism appears to exist in a social and political vacuum, ignoring the fact that everyday people can and do care about the spectrum and how they may or may not use it. A commons of any sort is not innately a commons. To define something as a commons is a political act by a community of peers that creates specific rules to ensure equal and cooperative everlasting use of something. It is not the absence of rules but rather rules made in a certain way by a community, whether this be a village, a neighbourhood, a city, nation or the global community. To constitute something as a commons is also an inherently legal act by which a framework of inclusive property rights is created as opposed to the exclusive property rights framework manifest in spectrum auctions (Werbach, 2011, p. 8).

Well established open spectrum advocacy organizations exist in the United States and Europe where they have each had a palpable impact on policy-making. The Open Spectrum Alliance is a group of individuals, companies and organizations that organize around and influence open spectrum policy issues in the European Union.[24] In the United States, the New America Foundation's Open Technology Initiative has been equally active.[25] One important issue that both of these organizations have helped advance is an experimental opening of a portion of the spectrum used for over-the-air television broadcasting. Commonly referred to as "white spaces," this portion of unused spectrum is located between the spaces used by television channels "or broadcast auxiliary services like wireless microphones" (Meinrath & Calabrese, 2008, p. 497). Historically, broadcasting (both television and radio) was a fairly inaccurate technology. A transmitter would use the space of several frequencies and send signals

24 Open Spectrum Alliance. http://www.openspectrum.eu
25 Open Technology Initiative. http://oti.newamerica.net

at high power to a general location where receivers, if tuned to the same frequency range, would capture these signals. In order to avoid interference between signals, a "buffer" space was set aside between frequency ranges (Werbach, 2011, p. 9). For example, if channel 6 is licensed for use in a certain place then channels 5 and 7 will be left vacant. This is also the reason why one will find radio stations broadcasting on the FM dial at, for instance, 90.3 and 90.5 but not at 90.4. Broadcasting and receiving technologies have become more accurate since this approach was put into practice. Recognizing the accuracy of new technology, it has been proposed that this "buffer space" (now commonly referred to as "white space") be reserved for unlicensed use. This means it could be used for a variety of unlicensed communication devices to interact with one another and thus with the larger network of the internet, just as a laptop connects to a router which connects to a network. An important and problematic (due to the current dominant paradigm) characteristic of this proposition is that it could potentially enable truly independent wireless communication without the need of a corporate intermediary or regulatory license (Meinrath & Calabrese, 2008).

Between 2008 and 2010, the FCC in the United States approved the unlicensed use of white space and issued a set of rules to which white space communication technology would have to adhere (Federal Communication Commission, 2010). Not long after, the European Union adopted new rules supporting shared and unlicensed use of the spectrum and "next-generation Wi-Fi" (La Quadrature du Net, 2011). In Canada, no advocacy groups currently organize around open spectrum and Canadian regulators are waiting to see what develops in the United States and Europe before taking any steps of their own in policy or technological experimentation and development (Industry Canada, 2010b). On a more global scale, the Association for Progressive

Communication (APC), an international NGO that works on themes of social justice and technology, launched its "Open spectrum for development" project in 2010.[26] A multi-year research project, it aims to determine regulatory, political, economic, and social spaces in Africa, Asia and Latin America where open spectrum management frameworks can be introduced (Light, 2010).

A final important factor in understanding the current regulatory climate is what is often referred to as digital television transition, whereby all member countries of the ITU will migrate their national television systems from analogue to digital broadcast technology. Because the new technology is much more accurate, even more "white space" will be opened up than currently exists (Werbach, 2011, p. 11). Countries in the industrialized world and others considered by the ITU to have the necessary technical capacity are required by the ITU to complete this transition by 17 June 2015 while developing countries have been given until 17 June 2020 (International Telecommunication Union, 2010b, p. i). The ITU provides extensive guidelines on how to make the transition. However, the details of the types of technology to use, how to encourage actual migration (it will require significant investment both on the part of broadcasters and people watching over-the-air television), and what to do with the spectrum space which will suddenly be available, are left undefined. Perhaps encouraged by this apparent neutrality on the part of the ITU, the debate over whether "white space" can be utilized as a commons has gradually become a debate over whether it is proper to introduce market tools into the management of this commons. Similar to Coase and Herzel's earlier academic proposition, two academic researchers published works specifically proposing the application of market economics as a management strategy for the spectrum commons before such an idea was proposed as

26 Open spectrum for development. Online: http://www.apc.org/en/node/10445/

legislation and policy (Hazlett, 2008; Noam, 1997). In summary, self-regulating market efficiencies would better manage a spectrum commons than a bunch of devices figuring things out amongst themselves. Recently, this academic proposition evolved into a draft proposal on spectrum auction rules, currently under development in the U.S. Congress (Republican Party, 2011). The original proposal of unlicensed use of "white space" was one that aimed to incorporate neither regulatory control nor market economics, hoping to recreate the effect that the introduction of Wi-Fi had by providing unregulated spectrum with which people could experiment and create (Werbach, 2011, pp. 12–15). The appropriation of the original white space proposal demonstrates that nothing is immune from reinterpretation. It also shows us that demarcations between advocates for a commons approach and a private property approach to spectrum regulation are not easily made nor maintained.

As with the other distinct periods in the development of thinking around the radio spectrum, the new commons era is marked by an ongoing discussion about command and control, with a number of related subjects relegated to the margins. For instance, who gave governments the ability to regulate the spectrum anyway (Noam, 1997)? What does all of this mean for citizens and their communities and what role do they play in these discussions and decision-making processes? Proponents of a spectrum commons / open spectrum management approach exist largely in contrast with free market spectrum auction supporters. However, the majority of the discourse developed around these issues refuses to address the problem of administrative decision-making in communications policy. Whether a spectrum commons is facilitated by "smart" technology or private property frameworks driven by auctions, it is still the role of experts – with their exclusive technical, regulatory, and political knowledge – to decide. The second half of this dissertation aims to analyse this

problematic through a comparative study of spectrum policy-making in Canada and Uruguay. I will attempt to demonstrate that the potential for a viable spectrum commons is directly linked to the possibility of democratic, non-elite and non-technocratic policy-making and regulatory design. Before heading there, I will further interrogate the current state of spectrum-related technology and policy, as well as its evolution/future trajectories. I will then examine the limitations of our "spectral epistemology" and propose that one of the most profound obstacles to nurturing a meaningful social relationship with the spectrum has to do with our frameworks for thinking about it and creating knowledge around it.

### 1.3 The Opportunity of Convergence

For policy wonks, policy analysts and policy observers, either with time on their hands to think about it, or technology in their hands to play with it, convergence is rising. For the telecommunications and media companies at its epicentre, convergence is now. This is the "information society," the mythical future world where we are built of bits. Our communicative utterances, brought forth from some great synaptic happening within us and pulsed into a telephone, microphone, computer undergoes an increasingly unavoidable transition and the nature of our sounds, words, movements changes form, like water to ice. Bits. Thanks to this transformation of our technologically-mediated communicative actions from narrow and exclusive analogue systems to interoperable digital ones, the data and information which embody our communication can easily bounce around multiple networks and be available to other people (and to ourselves) in myriad ways (European Commission, 1997, p. ii–iii). Communication technology is central to the functioning of the post-industrial service economy of the Information Society where great political and economic value is instilled in forms of information and data

(Chakravartty & Sarikakis, 2006, pp. 115–120). The cycle of convergence we are experiencing today may appear new and revolutionary because it is often presented as the result of current and ongoing technological change. This change in the way we communicate and organize our communicative behaviour, though, is the result of decades of social, economic, political and scientific evolution.

This section will briefly map the historical development of this most recent cycle of convergence in Canada while situating it globally. The technologies central to this transition - digital broadcasting, internet and cellular telephony - are sometimes conflated as simple pieces of the same puzzle. It is important to understand how and to what extent they fit together in order to fully comprehend the current cycle of convergence, its potential pitfalls and opportunities. I refer to "cycles" of convergence to emphasize the historical relationship of this current occurrence with previous instances.

Convergence is often presented as a merging of multiple technologies or their uses into one singular sort of technology or technological use. The first convergence of electronic media occurred with the melding of the telegraph and newspaper businesses in the early 1900s, leading to the creation of a new form of transnational media made possible by high-speed long-distance communication (Winseck, 1998, pp. 85–86). A second cycle of convergence began in the early 1960s with the development of communications satellites and their integration into telecommunications and media systems. In 1962, the Alouette was launched and Canada became the third country in the world with an orbiting satellite (after the USSR and U.S). Then, in 1964 Teleglobe, the Crown corporation for overseas

telecommunications, launched Canada's first communications satellite – the Anik.[27] During the entirety of this period, the majority of the communications technology being used was analogue and thus data was difficult and inefficient to process and manage. From this point onward, the transition from analogue to digital technology would be a driving force in subsequent cycles of convergence. This transition began in earnest with a third and crucial cycle of convergence taking place in the early 1970s when telecommunications corporations began to buy computing companies, integrating them into their businesses and setting the foundation for the digital future (Winseck, 1998, p. 187). The current cycle of convergence, accompanied and enabled by an almost complete delivery system changeover (analogue to digital) has been in the works since the early 1980s. While the previous cycle – the merging of computing and telecommunications -- occurred almost entirely outside the purview of the State (Winseck, 1998, p. 187), the current cycle has been under development, in concert with the State, for some time.

The rhetoric of convergence has a long history in Canada. Instant World, a federal report on telecommunications in Canada, was released in 1971, explaining the history of telecommunications and predicting that the ensuing "marriage of computers and communications" would radically alter Canadian society (Government of Canada, 1971). In 1992, the Communications Research Centre, then part of the Canadian Department of Communications, released a report entitled "The Changing Face of Broadcasting: Research Proposals for New Services" (Phillips et al., 1992).[28] A largely exploratory document authored by a group that included "psychologists, engineers and research scientists (there were no economists)" (CRTC, 2010d), it

27 Teleglobe was privatized in 1987. In 2012 it was the property of the Indian multi-national corporation, Tata Group.

28 The Communications Research Centre is currently part of Industry Canada.

examines available data and observes that "broadcasting, computing, telecommunications, and publishing were merging." It then sets out to consider how the Department of Communications may help broadcasters prepare for the future (Phillips et al., 1992). Written before the World Wide Web, the document's authors dream of cobbling together some sort of system that would combine computing and radio technology and enable citizens to be in two-way contact with one another or with various others at one time. Soon after, the World Wide Web and consumer-priced high-speed internet would be introduced, bringing about a massive new communication system not necessarily based upon the public interest orientation that had heavily influenced Canadian communication development since the early days of radio. Well analyzed elsewhere, Canada's implementation of high-speed internet provision was heavily dominated by corporate telecommunications companies (Darin David Barney, 2005, pp. 37–62). Similar to the effects of the differing regulatory treatment of spectrum for broadcasting and spectrum for telecommunications discussed earlier, the initial regulatory treatment of internet provision has had an enduring effect on the future regulation of this medium. Developed outside of public purview and with limited avenues for public participation in its policy design and implementation, internet provision was defined early on as a service uniquely within the realm of the telecommunications industry.

While the previous convergence cycle marked a change in the ways information in the communication delivery system was processed and distributed (from analogue to digital), the current cycle may result in the wholesale replacement of the system itself. It is melding portable wireless communication, wired communication technology and remaining analogue communication systems (mainly radio and television through the indirect effects of changing communications and economic policy). Previous cycles

of convergence since the 1920s always retained two separate yet complimentary communication systems – one broadly defined as telecommunications, and one broadly defined as broadcasting. Eventually both evolved to utilize a mix of analogue and digital technology. The current convergence cycle is progressively moulding one interconnected, singular system by transitioning broadcasting to new digital platforms (either through digital transition or by forcing it to the internet). High-speed internet provision through cellular telephony is at the heart of the transition process. The rate at which it incorporates individuals, communities and entire nations previously not included or partially included in the global communication system is an important aspect of this convergence cycle. In 1998, less than 10% of the world population had a cellular telephone subscription. By 2009 this had increased to an estimated 67% (International Telecommunication Union, 2010a, p. 195). It has been predicted that by 2015 more people will be accessing the internet through cellular phones than by wired means (Meeker, Devitt, & Wu, 2010). This drastic and comprehensive realignment of our communication system, relying importantly upon the spectrum, has been recognized as requiring comprehensive policy responses (CRTC, 2011d). Through such responses, there is great opportunity to re-create our methods of policy-making and regulation and to found them on the basis of democracy and inclusion.

One opportunity that has drawn enormous attention is what is known as the "digital dividend" and refers to the spectrum currently utilized by analogue broadcasting that will be liberated once broadcasters, listeners, and viewers have migrated to digital broadcasting systems. In Canada, there were once plans to move both analogue over-the-air television and radio broadcasting to digital. The digital radio transition has proved to be problematic (Industry Canada, 2010b; O'Neill, 2007) but plans for digital television have moved ahead rapidly. On 31 August 2011, over-the-air

television broadcasting became exclusively digital in the majority of the country (Canadian Heritage, 2011b). The Canadian government is planning to auction, in 2013, the portion of the spectrum that is was previously used for over-the-air television (Theckedath & Thomas, 2012).

Digital broadcasting can mean a number of different things depending on the technology implemented and the way this new broadcasting system is designed. The rule of thumb is that the space currently utilized by one analogue broadcaster will permit a potential six broadcasters in its place. However, this rule of thumb is purely theoretical. The decision of how this system works is the result of a decision-making process that is inherently political. As Gregory Taylor has shown, the transitioning of Canada's television broadcasting system was largely left in the hands of the industry itself, undermining the "public interest" pillar in Canadian broadcasting regulation (2009). Canada's choice of digital broadcasting standard and the manner in which it was implemented allowed "established analogue broadcasters and distributors (...) to present their own plan for transition – a luxury not afforded to new players" (Taylor, 2009, p. 271), thus largely maintaining the pre-existing structure. That said, how the spectrum that has been liberated by this transition is still up for debate and influence.

Like the spectrum itself, the possibilities presented by this latest convergence cycle are determined more by politics than by technology. Canadian communications policy-making and policy research are deeply rooted in history and tradition. While the knowledge that accompanies these practices is useful for recognizing historical patterns and policy cycles, there also exists a reflex to adhere to these pre-existing patterns and dominant cycles. Part of this is due to the fact that Canadian communication policy scholars work within a field that is still under development and

thus there is an impetus to create a historical record (Wagman, 2010). This reflex to create history, though, leaves us unprepared to grapple with the massive changes taking place in our communication system. Even the most progressive commentators default to the public interest tradition in Canadian broadcasting policy to provide a model for the digital and wireless age. It is a model that is consultative but ultimately technocratic; publicly interested and regulated, but privately dominated. However, what if convergence presents the opportunity to radically depart from this tradition in a far more democratic direction? What if instead of defaulting to old models based on old assumptions we begin to think about spectrum in a new way altogether – a way that opens onto the possibility of a truly, radically democratic commons?

### 1.4 Breaking from old habits: the tool of water

The first section in this chapter traces the historical development of our understanding of the spectrum, the relationship this understanding and its uses, and the various wireless technologies we employ in engaging in this relationship. The history of our purposeful interaction with the spectrum is peppered with the illustrative use of similes. One after another, comparisons have been manufactured as humankind attempts to make sense of this thing that is but isn't. In this way, we create structures for understanding and creating knowledge about the spectrum that are compatible with the dominant frameworks that structure our society. Quite incredibly (because otherwise a generalization of this degree is difficult thing to make) this generalization can be accurately applied to the way the spectrum is treated everywhere in the world. We do not speak of the spectrum itself having any cultural value; instead we speak of industries, economies, societies built upon its use. Yet before Hertz developed a way of measuring the length of electromagnetic waves, the spectrum existed all the same. Learning how to think about the spectrum differently demands curiosity and with

curiosity the will to suspend disbelief and to ask what is the spectrum is in and of itself, outside our own cultural and political preconceptions.

### 1.4.1 Water

Our everyday relationship with water is not dissimilar to our relationship with the spectrum. Equally hard to define apart from its idyllically simple molecular representation as $H_2O$ (which would be water were it pure, free of contaminants of any sort), we associate closely with water uses and infrastructures, but also the thing itself. Water is understood to be an easily identified thing, yet it and our relationships to it are actually quite complex. For instance: put down this pile of paper and draw a picture of water. Not a lake, river, stream, ocean, raindrop, puddle. Water. It is the fundament of human life. However, is it water that gives form to our bodies and environments or do our bodies and environments give form to it?

From our basic biological reliance upon water have flowed systems and practices that reflect and enable our use of it. Water is thus infused with a certain moral significance (Saunders & Wenig, 2007, p. 121) that ensures (one might think) its maintenance and availability. Like the electromagnetic spectrum, it is difficult to reference water without referring to a physical, technical or socio-political structure that bares it. Similar too, is their multifarious nature; both are media that carry much more than their simple form. These are two things that, on molecular, social, economic, and political levels tie together our bodies and societies. In doing so, they are inevitably connected with a variety of issues with which they are not often associated in their everyday use: social justice, social inclusion, social class. Is it possible to extend our everyday general social understanding of these things so that they become more than assumed knowledge tied to immediate satisfaction, instead

becoming actionable knowledge tied to broader social goals? How do we gain an awareness, a relationship with these things, so central to our existence as they are, in a manner more profound than their presumed immediate use?

In recent years, water has become an object of social mobilization around the world. Following the privatization of water systems in the 1990s and early 2000s, popular movements grew out of networks of unions, community activism, and local and international non-governmental organizations (NGOs). This dissertation draws part of its inspiration from the water movement in Uruguay, initiated by the workers' union of the federal water and sewage corporation (Funcionarios de Obras Sanitarias del Estado or FFOSE) which has grown into a national movement. The architects of the movement went through a process whereby an initial labour-led reaction to attempts at water and sanitation privatization was converted into a movement for the human right to water that crossed all political and social bounds (Marquisio, 2010). Ultimately, a citizen-initiated referendum created a constitutional article enshrining the human right to water provided by the State with the active participation of its citizens (Santos & Villareal, 2005).

The articulation of the human right to water in Uruguay and the broader development of this concept in Latin America (La Iniciativa MERCOSUR, 2007) is important and telling in its clarity. While in some cases, private water companies have taken advantage of human rights discourse to present themselves as the best actors to provide this right to citizens (Bakker, 2008), this is distinctly not the case here. Individuals are granted the human right to water – access to use water as they wish without regulation or limitation. This acknowledgement to the fundamental right to water insists that citizens be involved in the decision-making processes involved in

managing the country's water resources while acknowledging that the provision of clean water costs money and requires administration (Genta, 2010; Ponce de León, 2010). The recognition of water as a human right in Uruguay has provided that country's population with much more than access to water. It has re-structured citizens' relationship with water in such a way that they – rather than the politico-regulatory system – create and enact the politics of water.

Since the 1970s, communication has been framed as a fundamental human right. The origins of this proposition, though, have largely been political and academic, rather than emerging from grassroots organizing. Flowing from the World Summit on the Communication Society, the Communication Rights in the Information Society campaign (CRIS) attemptdc to bring this proposition to a larger audience and garnered the support of various NGOs around the world. However, it did not coalesce into a popular movement.[29] An important contribution of this campaign has been a framework for evaluating communication rights within a national context (CRIS Campaign, 2005) that has been used extensively to illustrate the great complexity inherent in the "right to communicate" (Raboy & Shtern, 2010). It is perhaps this complexity and the multi-pronged nature of evaluating communication rights that makes it a difficult thing to articulate outside of academic and legal contexts. However, if we were to narrow our focus to a singular medium (the spectrum), which, due to its essential form as a building block for communication, these issues themselves could/might grow forth naturally as a logical condition of our relationship with this medium.

Restructuring our social relationship with the spectrum is not necessarily any more

29 http://www.crisinfo.org/

difficult than what has occurred with water in Uruguay. In 2006, British human rights organization Article 19 published an analysis on "the legitimacy of license requirements for the use of wireless communications devices" (Article 19, 2006). Their analysis, based upon the right to freedom of expression as articulated in the *Universal Declaration of Human Rights* (United Nations, 1948) and the *International Covenant on Civil and Political Rights* (Office of the United Nations High Commission for Human Rights, 1976), questions the legitimacy of limiting an individual's use of the spectrum. A step in the right direction, this document remains stuck within narrowly defined legal and social structures. It has not been made for mass consumption, but it does open the door to a dramatically different discussion on the electromagnetic spectrum than have occurred thus far. The remainder of this dissertation will be dedicated to examining the extent to which discussions concerning the nature of the spectrum and the place of the citizen within politico-regulatory systems may occur in Canada and Uruguay and how they may be brought about.

## 2. Theoretical Foundations

In Chapter One, I traced the history of humankind's technologically-mediated relationship with the radio spectrum; the origins of various technologies used to interact with the spectrum and the regulations that govern their use; and the opportunity that presents itself today in the stormy waters of economic, political, and technological uncertainty and change. Finally, I illustrated epistemological limitations of past academic treatments of the spectrum and provided a strategy for thinking about the spectrum in a manner by which its social importance can be fully valourized in a decidedly non-monetary fashion. The current chapter concerns itself with operationalizing strategies for revising our relationship with the spectrum. First, I revisit and fortify the history presented earlier, demonstrating the utility and limitations of a political economy approach to communications research and analysis. In this way, I trace the origins of dominant value discourses relating to value and the structures that define and reinforce them. I then re-examine this history, bringing to the forefront communication practices often left on the margins in order to build a grounded framework for valourizing the spectrum in different ways. In the second half of this section, I build a conceptual tool I refer to as "life-media" which proposes that certain things in our world – such as the spectrum – are so central to our existence that their governance must be as transparent, democratic and participatory as possible.

### 2.1 Evolving Political Economy

The political economy approach to research and analysis has been used to interrogate questions of communication, media and technology since the 1920s when Harold Laswell and Edward Bernays made their initial forays into the domain (Graham, 2007, pp. 5–6). Importantly, these early communication scholars oriented their approach

around the economic and/or institutional structures that mediate or govern valourization – the act of assigning value or import. The political economy of communication has evolved through a number of stages and research traditions, largely as a tool for understanding the effects of commercial enterprise on freedom of expression and, in conjunction, the diversity of opinions seen and heard in the communication and media system (McChesney, 2007, pp. 37–98; Mosco, 2009, pp. 37–97). During its rise (and what some have termed its fall (McChesney, 2007)), this approach has become primarily concerned with a narrowly monetary consideration of value complimented by an equally narrow focus upon monopoly capitalism, this embodied in "the seeming monolith of 'The Media'" (Graham, 2007, p. 15). Graham has noted that a number of scholars who focus on social histories of technology such as Lynne White Jr (1940), Lewis Mumford (1961, 1967), Langdon Winner (1986) and David F. Noble (1997) should be included in a broad discussion of the constitution of the political economy of communication. However, the concerns mobilized in these works -- the communicative dimension of technologies and the fact that technologies play an important role in political economic formations -- have largely been overshadowed by the "mainstream" of the field (Graham, 2007, p. 14). Starting with the work of Herbert Schiller in the 1970s (H. I. Schiller, 1971, 1976) and continuing to the present, most work in the political economy of communication focuses on corporate monopolies and the effects of this ownership phenomena on society (Bagdikian, 1983; Centre d'études sur les médias, 2011; Garnham, 1990; Mansell, 2004; McChesney, 1993a; McChesney, Wood, & Foster, 1998). Methodologically, the authors tend to utilize quantitative methods to illustrate trends in ownership while qualitatively demonstrating what, for example, this means to democracy. Certain other authors have attempted to fortify this approach by introducing the concept of agency embodied in social and labour movements (Mosco, 2009, pp. 185–210) and

extending analysis to the level of transnational corporations and global media governance (Chakravartty & Sarikakis, 2006).

The "mainstream" political economy of communication approach serves well for understanding and presenting the manner in which the most visible and dominant parts of the communication and media systems function. As such, research generated by this approach has a tendency to focus upon large targets -- corporations and regulatory institutions -- which are typically characterized as unchanging or slowly evolving beasts and are often the target of critical analysis. It is thus a useful tool for illustrating current and historic arrangement of these forces. While this approach offers thorough critiques of the totalizing system of monopoly capitalism, the political economy of communication itself has become totalized, dedicated to the comprehension and dissection of what it aims to critique while offering little in the way of alternative visions of the world that may provoke change. Research in this vein tends be conducted at the exclusion of individuals both within and outside of these structures, constructing an irrefutable problem in which citizens and the public are central actors yet offering them no evident role in its resolution.

Political economic analysis seeks to understand the ways in which things are attributed value through a process of valourization. Valourization can be described as both the process and the outcome of assigning value or deriving value from something that is otherwise deemed value-less. The sort of value assigned need not be monetary – it can also be related to the use of the thing, for instance, how access to the spectrum enables political or social engagement. It is because of its social nature that its value can be changed. Value is not static; it is indicative of the relationships of power that exist amongst interested actors. While the body of work that has emerged from the political economy tradition of communication research may be

critical and often aimed at describing factors and systems of injustice and imbalance, the adherence to a monetary notion of value impedes the creation of functional alternatives by excluding concepts of value that have been constructed outside the dominant frameworks and processes of valourization.

The following section will provide, in part, a classic political economic analysis of the history recounted in Chapter One in order to construct half of a historical framework that will be utilized in building an integral and critical political economy of the spectrum. It particular, it focuses upon the early history of wireless communication regulation in Canada and internationally and the alignment of political and economic forces during this period. In Canada, there is a tendency among communication researchers to focus on what has occurred since the first Royal Commission on Radio Broadcasting (the Aird report) in 1929 and the subsequent founding of Canada's public broadcaster, the Canadian Broadcasting Corporation (CBC), in 1932. Very little attention has been paid to the use of the airwaves before this period, although it was during this very time that the political, social and economic structures underlying our contemporary communications and media systems were formed (Vipond, 1992, p. xiv–xiii). The second half of this section will again mine the previous chapter, showing a variety of communications initiatives undertaken over the past 100 years that demonstrate notions of value often omitted in spectrum policy discussions.

### 2.1.1 The Structures that Dominate

The history of wireless communication technology since the end of the 19th century is replete with political and economic structures fabricated for the purpose of controlling the use of the radio spectrum. The purpose of this section is to provide detailed historical context for the structures that dominate spectrum-oriented

discourse today, whether they be found in policy-making, research, technological innovation or activism. The telecommunications corporation, the domestic communications and telecommunications regulator, and international communications and telecommunications regulators/coordinators have long histories that are closely intertwined. Revisiting the history presented in the previous chapter, I will show the origins of these now dominant structures and the ways in which they valourize the spectrum.

International regulation of telecommunications – often viewed as coordination or cooperation between sovereign nations -- has been an important and influential factor in the development of telecommunication networks. A brief historical overview is therefore necessary in order to adequately illustrate the various political and economic forces already at play when wireless telegraphy emerged from the laboratory and onto the world stage. The International Telegraph Union (today the International Telecommunications Union or ITU) has played a central role in coordinating domestic communication policy among numerous countries since it's inception in 1865. At the time of its founding, telegraph technology had already been in use since the 1830s and was governed domestically (Wheen, 2011, pp. 3–17). Numerous attempts had been made to lay transmission cables between the United States and Europe to varying degrees of success (Wheen, 2011, pp. 19–29). Founded for the purpose of coordinating standardization and development of an international wired telegraph network formalized in the Telegraph Convention, all 20 of the ITU's original members were from continental Europe.[30] An important common point between all members is that their telegraph networks were state-owned; in fact, the United Kingdom was specifically not invited to the initial ITU conference because its

30 Signed in 1865, the Telegraph Convention was the initial agreement that governed the use of telegraph networks both within and between the signatory countries.

telegraph system was privately owned (International Telecommunication Union, 2010c; International Telegraph Union, 1865). In 1868, the United Kingdom was invited to join and, through the governments of member states, the jurisdiction of the Telegraph Convention was extended to apply to all publicly and privately owned telegraph companies in each nation (International Telegraph Union, 1868, pp. 32–33). The International Telegraph Conference of 1871-72 was a turning point for the collective development of the first international telecommunications network and the role of corporations in this development. Considering that the majority of the world's telegraph lines were privately owned and operated, it was decided that the companies involved should be invited to participate as members in the ITU (International Telecommunication Union, 2010d). In terms of sheer numbers, the influence of these companies can be seen immediately. Of the parties involved at this time, 19 were national governments and 16 were private companies. Among the companies involved, seven were submarine cable companies and four were conventional telegraph companies. North American private interests began to make in-roads with the Anglo-American Telegraph Company, active in both Canada and the United States (Glover, 2010), participating even before the Canadian and American governments themselves (International Telegraph Union, 1872b). Increasingly, governments and private companies in Latin America took part, with Argentina joining in 1890 (International Telegraph Union, 1891) followed by Chile, Ecuador, Nicaragua and Venezuela in 1896 (International Telegraph Union, 1897). Uruguay would join in 1903 (International Telegraph Union, 1903). The United States finally attended its first ITU conference that same year – the Preliminary Conference Concerning Wireless Telegraphy – as an observer, not a full member. It would finally attend as a full member in 1906 (International Telegraph Union, 1906). Canada did not join until 1912 (International Telegraph Union, 1913). Thus, through sustained participation in

the ITU during the era preceding wireless telegraphy, North America's private telecommunication companies became important actors in international policy-making while their home governments did not participate at all. This did not mean that the domestic telegraph carriers involved in the ITU could not engage in international telegraph communications with non-ITU members (rules in the Convention permitted such business transactions), rather the citizens of these countries – through their elected governments – were not represented in the policy-making concerning this system. Other than by expressing themselves through their respective governments, citizens were unable to access any debate or decision-making processes.

While wire-line telegraph networks were setting the stage for international policy-making and the international commerce of telecommunications, numerous inventors around the world were attempting to create a wireless form of telegraphy. As with the wired telegraph, wireless developers worked with a mix of private and public funding (Aitken, 1976; Wheen, 2011, pp. 3–17). This period of regulatory and technological growth in the field of communications was equally one of flux and development in the field of intellectual property rights, their definition and administration. The concepts of copyright and patent – mechanisms for rewarding monopoly ownership to the creator of a unique work – had been formalized in the UK *Copyright Act of 1709* (also known as the *Statute of Anne*) (Shemanski, 2010) and in the Constitution of the United States in 1787 (Boldrin & Levine, 2008, p. 9). Patents had since been granted in each country through direct application to Parliament or Congress. Eventually, the first international intellectual property rights treaty, the Paris Convention for the Protection of Industrial Property, was signed in 1883 as a result of the refusal of foreign exhibitors to attend the International Exhibition of Inventions in Vienna in

1873 for fear that their works would be stolen and commercially exploited elsewhere (World Intellectual Property Organization, n.d.).[31] Thus, when Guglielmo Marconi filed a patent in the UK in 1896, he could have expected a minimum of international recognition and enforcement. There is much debate over whether Marconi or a number of other inventors of the period invented radio -- the debate itself largely resting on the publication of scientific results and patent applications. Boldrin and Levine have argued that Marconi's most important contribution was the decision to ground the radio transmitter and receiver (2008, pp. 202–204). Marconi built his model utilizing the work of Sir Oliver Lodge, who demonstrated long-distance wireless telegraph transmission in 1894, and Nikola Tesla, whose transmission system, documented and published in 1893, Marconi has been shown to have emulated (Boldrin & Levine, 2008, pp. 202–205; Cheney, 1981, p. 69). While Marconi was granted a wireless telegraph patent in the UK, Tesla obtained one in the U.S.. In 1897, which was eventually overturned and granted to Marconi in 1903 for largely unexplained reasons (Boldrin & Levine, 2008, p. 205). Thus, while several individuals had worked towards the creation of wireless technology, Marconi was eventually granted a monopoly on wireless technology by way of these patents. Marconi's patents and those of other inventors around the world put in place an international legal framework which nicely dovetailed the international coordination efforts of the Paris Convention. This period also marks an important moment in the early global governance in communication technology and its use. Within the first decade of the 20th century, governments around the world were actively collaborating on the use of wired telegraphy, wireless telegraphy and the recognition and

31 On a related note, the Berne Convention for the Protection of Artistic and Literary works was signed in 1886. This was the first international framework for protecting and enforcing copyright. The Paris Convention and Berne Convention gradually became the World Intellectual Property Organization in 1974 and is a specialized agency of the United Nations (World Intellectual Property Organization, n.d.)

enforcement of intellectual property rights frameworks in the form of patents and copyright.

At the turn of the 20th century, when radio-telegraphy was the only way in which citizens could gain access to the radio spectrum, the patenting of radio technology was a claim to exclusive access where private corporations and state governments acted as gatekeepers of the spectrum. Occurring well before any effort to create another sort of legal framework by which radio technology could operate, the patenting of radio transmission technology oriented the political and economic playing fields in such a way that governments would have to make their regulatory power known, while at the same time integrating this new technology into their state infrastructure. At this privileged point, radio was guided by to two underlying premises: 1) it is the exclusive role of private corporations to develop and provide radio communication technology and; 2) the motivation to develop, improve, innovate, and provide a radio communication infrastructure is primarily monetary.

To understand the position of the Canadian government in the midst of these developments, I turn to debates on the national laws respecting wireless telegraphy in Canada and the United Kingdom between 1903-1913. These debates, combined with the growth of the ITU discussed above, provide an initial orientation of domestic and international spectrum policy with regards to the roles of both private enterprise and the citizen. New Zealand, Canada and the United Kingdom were the first nations to pass legislation on wireless communication.[32] Examination of the debates from this time will demonstrate the ways in which wireless communication was considered politically and will provide insight into the relationship between the state and private

32 I have unfortunately been unable to locate New Zealand parliamentary debates from this period and thus they are not included in the current analysis.

industry. The intricacies of the British Commonwealth should also be taken into account, as much debate in the British Parliament at the time involves the extension of wireless telegraphy to British colonies and domains (Parliament of the United Kingdom, 1903; Winseck & Pike, 2007). Analysis of ITU conference documents from this period also shows numerous British colonies and areas of the British domain participating actively in wireless policy-making at the international level (International Telegraph Union, 1903, 1906, 1913). The following summary breaks down Parliamentary debates and related events in Canada and the United Kingdom between 1903 (the first point of debate) and 1913 (the year that a substantially revised act on wireless telegraphy was introduced in Canada).[33]

**The beginning of legislation**

By 1903, public and private companies had developed an extensive international wired telegraph network and private companies had begun to develop wireless networks transmitting between land-based stations as well as stations transmission stations at sea. The earliest debates in British Parliament show initial concerns with 1) the ability of the public, through state-owned transmission facilities, to utilize wireless telegraphy for international communication and, 2) the commercial and strategic (military) future of the country. There is extensive debate on the use of wireless telegraphy by the military, extension of its use to various colonies and its installation and use in lighthouses and on ships. (Parliament of the United Kingdom, 1903).

The private development and use of wireless telegraphy took place in advance of governmental policy design and implementation. This is a cycle that, as seen in

33 The existing UK legislation was carried over as were a variety of other expiring laws.

Chapter One, occurs consistently throughout the history of electronic communications technology. Indeed, policymakers can often be seen trying to keep up with advances in both the creation and use of communications technology, at times implementing regulatory limitations on "the unknown" in advance of their decisions. One early example can be seen in 1904. While the UK had not yet implemented regulation concerning wireless telegraphy, it was intent on maintaining control of wireless telegraph use. This is expressed through concern over the use of "a Marconi instrument" for the distribution of horse racing results – an innovative (and later to be deemed either licensed or unauthorized) use taking place mere months before the creation of a regulatory framework (Parliament of the United Kingdom, 1904b). Three months after this transmission event, the second reading of the *Wireless Telegraphy Bill* (Parliament of the United Kingdom, 1904a) took place. Debate focused largely on concern that, as noted by the Postmaster-General, "we should not allow a big monopoly to grow up which, at some time, the State might have to purchase" (Parliament of the United Kingdom, 1904c).[34] The bill was studied further in committee where it was decided that all wireless telegraph operators would need to be licensed by the Postmaster-General who is given authority to fine, or confiscate the telegraphy equipment of any parties who operate in breach of regulation (Parliament of the United Kingdom, 1904d).[35] Finally, the bill was debated a third time, causing numerous concerns to surface, some of which reappear throughout the history of wireless communication and regulation. In particular, the First Lord of the Admiralty, the Lord of Selborne, pressed that wireless telegraphy must be strictly controlled because otherwise "its whole utility may be negatived and nothing but chaos supervene" (Parliament of the United Kingdom, 1904e). Thus, control of the

34 Following adoption of this bill, the Postmaster-General became the minister charged with regulating wireless telegraphy.

35 At the time, British and Canadian parliaments often studied legislation "in a committee of the whole" as opposed to within specialized Standing committees.

spectrum was established in unison with the enduring argument that without strict state regulation of the spectrum, chaos will reign. Declaring that "for the proper civilised use of the invention control is essential" (Parliament of the United Kingdom, 1904e), the UK established centralized federal regulation as the dominant model for regulating the spectrum.

The British *Wireless Telegraphy Bill* was initially given a limited two year term. In the related debates, the reason given for this limit was to permit for controlled experimentation and development of the technology. During debate on its extension in 1906, the Postmaster-General (now one Mr. Sydney Buxton) stated that the bill was "passed two years ago in consequence of new companies springing up" and urged its swift extension as the licensing processes put in place were functioning effectively (Parliament of the United Kingdom, 1906b). Thus, it appears that the regulation provided for in the initial bill was well established in maintaining control of the use of wireless technology before private companies (or anybody else) could develop it outside the strict controls of the state. Ultimately, the bill was extended indefinitely with no alterations (Parliament of the United Kingdom, 1906a).

**Enter Canada**

Canada's foray into spectrum regulation began in 1905 with the *Wireless Telegraphy Act* which was, coincidentally, given royal assent the same day as an act providing the Fessenden Wireless Telegraph Company of Canada a charter to operate (Parliament of Canada, 1905a, 1905b). Presenting the *Wireless Telegraphy Act* to Parliament, Raymond Préfontaine, Minister of Marine and Fisheries, stated that "this bill is almost an exact copy of a Bill passed by the British parliament last year for the

regulation of wireless telegraphy in Great Britain."[36] Préfontaine continued to say that this bill "was forwarded to the Department of Marine and Fisheries in the month of August last with the suggestion that a similar law be passed for the Dominion of Canada" (Parliament of Canada, 1905c). Armstrong has proposed that the passage of the *Wireless Telegraphy Act* of 1905 in Canada was a demonstration of Canadian independence from the United Kingdom (R. Armstrong, 2010, pp. 20–21). However, the Canadian legislation was in fact introduced at the prompting of the British Colonial Office on the basis that allowing private industry to develop without an orderly licensing regime would result in a dysfunctional communication system (Vipond, 1992, p. 7). Indeed, the suggestion that Canada do so was made within mere days of adoption of this law by the British parliament and soon after "the Wireless Telegraphy Branch (later called the Radiotelegraph or Radio Branch) was setup within the Department of Marine and Fisheries" (Vipond, 1992, p. 8).

From the Canadian and British parliamentary debates between 1903-1905, a discernible tension can be observed between a state that desires strong centralized control while attempting to stimulate a new market. Eager to prevent private monopolization by certain companies, it also needed to contract these same companies to build transmission stations for government use.[37] Contrary to the British desire to control wireless telegraphy, debates in Canada framed the Act as one based on controlling "wireless telegraphy in such a manner as to ensure the greatest efficiency, and to obtain the greatest benefit to the public interest" (Parliament of Canada, 1905c). The "public interest", however, was not explicitly defined. That said, the notion of the public interest is alluded to in earlier British parliamentary

36 While the Postmaster-General was responsible for wireless regulation in the UK, in Canada it was the Minister of Marine and Fisheries.

37 The UK and Canadian governments both contracted Marconi's Wireless Telegraph Company to build, operate and maintain State-operated wireless telegraph stations.

debates as the ability of citizens to access privately-owned communication services, a fact that could not have been lost on Canadian law-makers given their emulation of British wireless policy. Through these early debates and policy-making processes, three distinct sorts of value creation begin to come into focus: the creation of monetary value; the value inherent in state control in the name of the public interest; and the value of state control in the interest of the state itself.

**Formalizing Global Spectrum Governance**

Following the initial frenzy of domestic legislative development, wireless telegraph law-making became highly coordinated at the international level. The 1912 International Telegraph Conference recognized the principle of the freedom of interconnection, meaning that telegraph companies had the right, if not the obligation, to accept transmissions from other operators and to pass them on.[38] While the UK summarily extended its wireless telegraph act along with a large number of other expiring laws (Parliament of United Kingdom, 1913), the Canadian parliament presented and adopted a new act aimed at incorporating standards developed at the level of the ITU (Parliament of Canada, 1912a, 1913b). Quite importantly, this legislation gives power over telecommunications to the Governor in Council (Parliament of Canada, 1912a), something that continues to be a factor in contemporary Canadian policy-making.[39] While the legislation only envisioned wireless telegraph transmission, a last-minute, hand-written change added radiotelephony (what would later be called "radio") to the bill because wireless transmissions of any sort could potentially interfere with one another (Vipond, 1992,

38 Later referred to as the common carriage principle, this concept has been central to the growth of telecommunications networks of all sorts, culminating with the internet.

39 It is this early decision that today provides for the ability of the Governor in Council (also known as the Cabinet) to overrule decisions made by the CRTC, for instance.

p. 10). This was the first legislation in the world to recognize regulation of the entire radio spectrum under one umbrella. It remained Canada's only radio transmission legislation until 1932 by which time a thriving private radio broadcasting industry had created itself and its broad audience while working within the constraints of an underdeveloped regulatory framework (Vipond, 1992).

From the period predating the development and spread of wireless telegraphy and continuing into its early years of use, two models of telecommunications corporations evolved. In North America, the privately-owned model was not only dominant but singular – the only thing in town. In Europe, what began as an organization within the ITU organized on the basis of state-run telecommunications companies was quickly expanded to include the private wired telegraph sector and again to include private companies developing wireless technology. Thus, the early implication of the private sector in international communications policy-making established telecommunications companies – both those developing technology and those using it – as recognized experts invited to co-develop regulation with governments. In addition, the establishment of the common carrier principle as a rule in international governance of telecommunication networks assured that messages sent over privately-owned networks could not be excluded from state-owned networks. The public and the private would co-exist. In the case of the UK, the Post Office was both wireless regulator and wireless provider, at once regulating, collaborating with and competing against developing commercial telecommunications companies.

The structures that today dominate spectrum policy-making – the telecommunications corporation, the domestic regulator, and the international regulator/coordinator – were born long ago. In the case of Canada and the UK, there is no evidence this took place

with the input of the public.[40] While regulation or legislation in the public interest was established early on, the notion of the public interest was defined in the UK -- and alluded to in Canada -- as the ability of the public to access privately owned and operated communication networks. Lacking public input, the public interest was defined not by the public but by experts – in this case the legislators who crafted Canada's earliest wireless telecommunications laws. Therefore, at the moment of regulatory inception, the exclusion of the public from fundamental discussions and decision-making concerning the use of the spectrum for communication is evident.

### 2.1.2 Self-perpetuation and the control of value creation

Three types of of valourization emerge from the early history of spectrum-based communication in Canada: the creation of monetary value; the value of state control in the name of the public interest; and the value of state control in the interest of the state itself. Each continues to be a central factor in what could be termed the dominant political economy of the spectrum and is organized around the interests of dominant political and economic entities, namely the corporation and the state.

The place of private enterprise in the making of technology and the creation of wireless communication networks has been a central factor in the construction of the enduring relationship between technologically-mediated communication and monetary value. From Marconi's first patent in 1896 through the recognition of audiences as target markets for the sale of advertising and technology in the 1920s (Vipond, 1992, pp. 27–50), it is evident that the task of creating communications

40 Nowhere in Parliamentary debates or in the Parliamentary Committee in Canada and the UK from this period is there reference to any sort of consultation with the general public nor mention of the perceptions or beliefs of the various constituents (Parliament of Canada, 1905c, 1905d, 1912a, 1912b; Parliament of the United Kingdom, 1903, 1904b, 1904c, 1904d, 1904e).

technology and introducing it in Canada was left exclusively to the private sector. Point-to-point wireless communications were introduced by companies such as Marconi's Wireless Telegraph Company and the Fessenden Wireless Telegraphy Company through both state-commissioned networks and consumer or business-oriented communication platforms. Radio broadcasting for the sake of entertainment developed within a permissive regulatory framework enforced by a federal department structured around the use of wireless transmission for the navigation of oceanic rather than cultural waters. Thus, similar to what was occurring at the ITU, technical expertise accumulated in the private sector and was unmatched by state regulation or expertise, allowing it to, for the most part, build the communications and media system as it saw fit. While it could perhaps be assumed that the policy processes at the time were dominated by private interests, these early legal frameworks in fact provided no such processes whatsoever. What the legal frameworks did make clear, however, was that wireless communication regulation was to be the exclusive domain of the federal government and that economic criteria would take precedence in decision-making.[41] The dominance of the private sector can be explicitly observed in the Parliamentary debates in Canada and the UK as explored above. Citizens and the state are identified as actors with vested interests, but both are considered as consumers of the physical goods, services and expertise provided by a small number of companies. It was through this initial orientation of actors that the use of the spectrum as a means for communication – whether point-to-point in the case of wireless telegraphy, or broadcasting as in the case of radio – became closely bound to the creation and accumulation of monetary value. This, in turn, has contributed to a contemporary (and historic) econocentric understanding of the spectrum, one which

41 It should be noted that during this period, the Canadian federal government was engaged in a jurisdictional dispute with several provinces in western Canada,who had the right to regulate wired telephone networks (C. Armstrong, 1986, pp. 141–186)

(C. Armstrong, 1986, pp. 141–186).

"tends to reify everything in sight, reducing complex social relationships between people ... into objects that individual actors can then seek to acquire" (Graeber, 2001, p. 46). And so today it is a normal thing to auction an airwave.

Regulation is today a loaded word, one which brings to mind various sorts of tribunals, commissions, regulatory bodies and industry groups. In the democratic sense that regulation should occur transparently and without bias, a regulator or official decision-maker is supposed to be an objective arbiter. For many individuals who play such a role in society (such as judges) strict comportmental limitations restrict their behaviour to assure a state of objectivity. However, at the inception of wireless regulation, the state played multiple roles as consumer, user and sometimes service provider of wireless technology, and the ultimate regulator of the industry. It was thus far from an objective arbiter in the matter of wireless communications. Regulation during the birth of wireless communication meant, fundamentally, control of the use of wireless telegraphy by the state. First mobilized in the introduction of wireless communications legislation in 1905 (Parliament of Canada, 1905c), regulation in the public interest is a concept that has proved durable in Canada and is often depicted to be central to the nation's broadcasting system (R. Armstrong, 2010, pp. 112–115).

Regulation in the public interest demonstrates a tendency of the state to be not simply accessible to citizens but representative of their interests and concerns. In the British parliamentary debates concerning initial wireless legislation, it was repeatedly stated that wireless communication must be strictly regulated to assure that monopolies do not develop (Parliament of the United Kingdom, 1904c). Canadian Parliament, while mirroring British legislation, did not rationalize regulation through the reference to

monopolies. Instead, it demonstrated, more in discourse than actual policy, a concern that the public be served by a competitive marketplace, thus balancing public concerns of accessibility with private concerns for profit. Gauging and defining the public interest relative to communications policy is tricky business even today with a host of policy consultation tools available. In the first 25 years of wireless communication, however, I have found no evidence of a public consultation of any sort.[42] Thus, at the beginning of its use for communication, the spectrum – through wireless telegraphy – was valued not according to the self-expressed interests of the public, but according to how these interests were characterized by the state.

As discussed earlier, the introduction of wireless legislation in Canada can be seen as part of a larger strategy of British colonial control at the beginning of the 20th century. This strategy saw legislation rolled out to domains under British influence or control in a coordinated fashion, something that would logically ease international coordination at the ITU. In Canada and the UK, domestic legislation was couched in terms of public safety at sea following the sinking of the Titanic as well as concern for the public interest. In essence, the legislation established, with little debate and no mechanism for public participation in the decision-making process, the state as the central controller of both the spectrum and the ability of people to communicate wirelessly.

### 2.1.3 Is uncontrolled communication a subversive act?

The structures explored above dominate more than economic, political and social relationships; they also tend to dominate historical analyses of these relationships. In

42 This conclusion is based upon analysis of relevant Canadian parliamentary debates and standing committee reports between 1905-1915. The legislation passed during this period would stay in force until the 1930s.

the field of history, scholars have undertaken the task of authoring magisterial works examining the histories of non-dominant or marginalized actors, such as Eduardo Galeano's *Las venas abiertas de América Latina* (Galeano, 2000), Howard Zinn's *A People's History of the United States* (Zinn, 2003) and Richard Gott's recent *Britain's Empire: Resistance, Repression and Revolt* (Gott, 2011). In the field of communication studies, similar work has been done, focusing on non-dominant actors and known by a great variety of names: alternative media, independent media, tactical media, citizens' media, community media, and radical media to name but the most prominent. Within this domain, the history of movements that are organized around spectrum-based media and resist or otherwise challenge dominant notions of use and governance finds its greatest depth in literature about radio broadcasting which consistently traces the origins of citizen appropriation of the FM dial to the 1940s and 1950s. Literature on the appropriation of telecommunications for non-monetary pursuits, however, tends to frame the phenomena of social organizing around communication technology as something quite recent and as something inextricably bound to an internet accessible to consumers, thus skipping over decades of relevant history. Often, the creation of the Indymedia online self-publication movement during the World Trade Organization (WTO) protests in Seattle in 1999 is used as a reference point for framing contemporary communication-focused activist movements (Bennett, 2003; Kahn & Kellner, 2004). The tendency to focus upon activist movements within easily accessible historical contexts, however, is misleading and obstructs important steps in the evolution of contemporary movements related to the use of technology in facilitating free expression. Online activism did not begin with Seattle; rather thousands of people around the world were operating their own independent electronic communities and computer networks in the 1980s and 1990s

outside regulatory frameworks.[43] Similarly, citizen appropriation of the airwaves and the sets of values that accompany such appropriation began earlier than the easily accessible and oft-repeated histories of community radio in the mid-20th century. In formulating a comprehensive political economy of the spectrum it is important to include the movements of spectrum-related activism that are most present, but also those that remain absent from even alternative histories. Building and integrating the history of these movements into thinking about the spectrum is important not only in terms of learning from past experiences and understanding the origins of these social movements, but also because they help to construct an understanding of value within multiple time periods. Such an understanding of value with regard to the spectrum is a vital tool for interpreting the history of wireless communication and in demonstrating that non-dominant concepts of value concerning the spectrum are as old as the structures that dominant the governance, use of, and academic research on wireless communication today.

Throughout the history of wireless communication and regulation, control of the spectrum has been a primary focal point for most actors concerned (for non-dominant or marginalized actors just as much as for dominant actors). Dominant actors – embodied in various state and private bodies – aim to control the spectrum centrally and singularly through expert-driven processes of technological production and decision-making. From the initial proposal of Canadian wireless legislation in 1905 to the present day, it has continuously been argued that access to the spectrum must be strictly controlled in order for licensed wireless communications to function properly. For over 100 years it has been illegal, upon threat of fine, imprisonment

43 Electronic bulletin board systems (BBSs) were independently operated digital communities. Many people, myself included, took part in operating communication networks of international scope. The history of this movement is largely absent from academic discussions of online or electronic activism.

and/or confiscation of equipment, to transmit unauthorized signals over the air. For nearly an equal amount of time, a diverse range of individuals, communities and social movements has challenged the technical and sociopolitical foundations underlying this regulatory approach. In so doing, they have attributed a set of values to the spectrum that challenges the structures dominating its use and governance. Revisiting a number of these examples of alternative spectrum valourization, I aim to construct a new and critical political economy of the spectrum to counterbalance the dominant one.

Unauthorized use of the spectrum implies the existence of a legal framework governing the spectrum. Thus it could be said that any wireless transmission predating the first legal frameworks on wireless telegraphy would have operated in perfect legality. The first instance of unlicensed transmission that I've encountered, mentioned previously in discussion on early regulation in the UK, was the case of "a Marconi instrument" (wireless telegraph transmitter) that had been setup at the Newmarket race track in order to diffuse race results (Parliament of the United Kingdom, 1904b). In response to concern, the Postmaster-General, to be charged in three months time with regulating the spectrum, replied that he was "in communication with the persons concerned". While I have found no documentation of what ensued, the fact that this legal and innovative use of wireless technology warranted both discussion in Parliament and the direct intervention of a government minister demands reflection. If this act of wireless transmission was legal because it existed outside of any regulatory framework, why did it attract this sort of attention? Was the British Parliament, even before introducing legislation, attempting to establish regulatory control?

The first example of everyday citizens building and utilizing wireless communication technology for the simple sake of communication without monetary return is found in the shortwave radio movement of the United States and Canada following World War I. Preceding the war, a community of self-taught enthusiasts had formed around the pursuit of technical experimentation: amateurs wanted to see how far they could push the existing technology (Berg, 1999, p. 7). Working collaboratively in an environment where "the development of radio technology was monopolized by the military and the big corporations", tens of thousands of citizens began to participate in shortwave broadcasting in North America, eventually establishing the American Radio Relay League which, in turn, provided a public face for amateur radio and published a magazine that circulated broadcast schedules and schematics for building equipment (Berg, 1999, pp. 12–13). During World War I, however, all amateur use of the airwaves was banned in Canada and the United States, leaving this large community of amateur radio broadcasters "chomping at the bit" to operate again (Leinwoll, 1979, p. 105; Vipond, 1992, p. 12). After the ban was lifted in each country, amateur radio users returned to the airwaves, apparently in an organized fashion, recognizing that in order to successfully pursue their craft and to have their signals successfully received, licensing of operators and the use of certain frequencies would be of logical importance. In 1923, radio amateurs successfully communicated between the United States and Europe for the first time, demonstrating that the means for international wireless communication were within reach of citizens, albeit citizens with a high degree of technical knowledge (Leinwoll, 1979, pp. 110–115). Rather than keep this knowledge secret, it was published and circulated widely (Leinwoll, 1979, p. 115). In Canada, the amateur radio community has maintained representation within the policy system since the founding of its first organizing body, the American Radio Relay League Canadian Division in 1920 (Radio Amateurs of Canada, 2011a). It

should be noted that the policy system they engage with is purely technical and administrative; simple demonstration of technical proficiency is rewarded with a license. Largely self-regulating (Radio Amateurs of Canada, 2011b), the spectrum that is reserved for its use has been referred to as a "park" that is not necessarily open to the entire public but plays a conservation role (Industry Canada, 2010b).[44] With a minimum of rules associated with its use, one must pass an examination in order to receive a license, call letters and thus legal access to the spectrum. Some "hams" or "DXers" compare this to the national park system in the United States (Miccolis, 2010). Today, the users of this "park" have grown to 56,000 licensed individuals in Canada alone (Radio Amateurs of Canada, 2011c).

The history of shortwave radio provides an important example of how a social movement oriented around wireless communication has been able to define itself as a group of technical experts who have retained a large portion of the radio spectrum for use among a relatively small number of individuals. While it has been used extensively by governments for broadcasting into foreign territory, especially during World War II and the Cold War (Berg, 1999, pp. 203–248), shortwave radio users are largely individuals engaged in a hobby, communicating for the sake of being able to communicate freely with whoever is willing to listen (Radio Amateurs of Canada, 2011c). Two important themes emerge from the story of shortwave and amateur radio; the first a strategy for attaining the second.[45] Early in their history, shortwave radio users defined themselves as experts and coincidentally refined an expertise

44 Radio amateurs coordinate amongst themselves the sharing of frequencies that have been allocated for this use. Should a radio amateur overstep these community-defined bounds, however, licensed users can lodge a complaint with Industry Canada (Radio Amateurs of Canada, 2011b).

45 A distinction is often made between the two. Shortwave radio refers to the way in which signals are broadcast while amateur radio is the use of this broadcasting technique for communication among individual users.

desired by the state in order to better understand and regulate the spectrum (Leinwoll, 1979, p. 137). The expertise of this community has allowed them to continue to practice a specific art of radio communication valuing the ability to freely and independently communicate while adhering to a minimum of regulatory oversight or intervention.

Establishment of wireless regulation is sometimes accompanied by a battle or various battles over the right to be represented within the regulatory system as stakeholders or decision-makers, the right to be represented throughout the communications and media system as a whole, and claims to the legitimacy of the regulatory system itself. At these points and similar junctures, when individuals or communities have not been integrated into the regulated communication and media system to the extent they desire, or when they dispute the legitimacy of the state to control use of the spectrum, there is a historical tendency for people to take things into their own hands by engaging in unauthorized/unlicensed/pirate broadcasting. Canada experienced two such junctures in the early 20th century, the first coinciding with a policy revision in 1922 that divided licenses into the categories of broadcasting and receiving, thereby mandating everybody owning a radio receiver or transmitter to pay a yearly fee (MacLennan, 2010, p. 37). The second juncture coincided with the introduction of Canada's first legislation specifically dedicated to the use of radio transmission for entertainment and information diffusion – what we commonly refer to today as "radio." MacLennan and Vipond have also shown that this form of broadcasting was undertaken at a time in which the licensed broadcasting system was largely dominated by commercial interests such as newspapers, radio equipment manufacturers and railroads (MacLennan, 2010, pp. 37–38; Vipond, 1992, pp. 26–54). Within this setting, unlicensed stations were founded in order to broadcast material not

considered financially profitable and therefore absent from the airwaves: namely religious, multilingual, and political programming. Many such stations also tended to serve smaller communities not otherwise served by media of any sort (MacLennan, 2010, pp. 41–42).

By 1930, there were close to 300,000 licensed radio receivers in the country, yet many believed that radio should be free of monetary cost, particularly because the majority of the population lived close enough to the U.S. boarder to receive American radio signals (MacLennan, 2010, p. 41). The *Broadcasting Act* of 1932, established radio as something to be regulated, and that it would be regulated by the Canadian Radio Broadcasting Commission. The *Act* also increased radio license fees ($50 for broadcasters, $2 for listeners), sparking a movement of "pirate listeners." While MacLennan has determined that Canadian regulators generally tolerated early unlicensed or "pirate" broadcasting, she has equally shown that these same bodies closed down numerous such stations that were causing interference or broadcasting "obscene" programming (MacLennan, 2010, p. 45).

Canadian "pirate" radio today exists in multiple forms. It is used as a mobile communication tool for activist organizing (Langlois & King, 2010), a means to make audio art that demands that the audience think about the airwaves (Létourneau, 2010), and a means of raising awareness on the subjects of power, control and authority (Sakolsky, 2010). The motivations behind this intentional use of the spectrum outside the bounds of regulatory norms, however, continue to demonstrate the desire of individuals to communicate on their own terms without the need to submit to an authority other than that found in their immediate community or audience. Through these acts, participants engage in processes of value creation by making themselves

and their intentional acts of regulatory disobedience visible to one another, to the greater society and, at times, to the state. In this way, the spectrum is valued as a medium of public communication, one central to the act of publicity by which actors identify themselves as actors. The fact that this occurs not simply outside the authority of the state but in opposition to it, means that "pirates" (also known as citizens) claim regulatory power for themselves.

While "pirate" users of the spectrum operate in opposition to the regulatory frameworks of the state, community media groups - embodied in community radio, community television and community wireless networks -- have grown within these frameworks. Of the three, community radio is the most highly developed in terms of the number of licensed stations, level of integration into regulatory frameworks, and domestic and international organization. While they differ in form and function, there are important commonalities to be found between them. In Canada, community radio and television have each been subject to federal regulation since the 1970s. They exist across the country and have been subject to a variety of academic treatments (Fairchild, 2001, 2001; Girard, 1992; Lewis, 1990; Stiles, 1988) and extensive cyclical regulatory reviews (CRTC, 2000, 2001a, 2001b, 2010b). Community television is largely restricted to operating on cable networks and has a long and contested history that has been addressed elsewhere (Hardin, 1985). Currently, four community television stations broadcast over the analogue airwaves but these have been largely overlooked in the recent digital-to-analogue television broadcasting migration as well as academic analyses of this process (Taylor, 2009). As with community radio, television stations of this sort exist primarily to give voice to immediate geographic communities and to the diverse perspectives found in these communities (Lithgow, 2010). Indeed, this mandate is a regulatory requirement of both community radio and

television (CRTC, 2000, 2010c). Contrary to "pirate" broadcasting, these types of media seek legitimization through a public and regularized integration with the communications and media system and with the greater community. Through processes of integration, community radio stations have developed a movement of over 150 licensed stations across Canada that facilitate broad community ownership of communication and media resources. With these material and knowledge resources, citizens are able to engage in self-representation within the larger media system and provide a counterbalance to dominant media voices. Another form of value emerges: the use value of the spectrum as a medium for engaging with society on a broad scale while democratizing resources and access to the creation and dissemination of knowledge.

The current relationships between spectrum users who engage in radio and television broadcasting are necessarily complicated by the fact that the portions of the spectrum used by these technologies are strictly regulated and have been so for decades. The rationale for this regulation, as noted in the previous chapter, is a response to spectrum scarcity, itself the result of outmoded regulatory and technological practices. To the contrary, community wireless networks have been constructed out of a portion of the spectrum that has historically been shared by a variety of communication devices including garage door openers, remote controls and cordless phones. The construction of these community-based communication networks has thus occurred on largely uncontested space and demonstrates the potential for independent, uncontrolled and cooperative wireless communication. Users of other forms of radio communication, due to the nature of technology and regulation, must continually engage in strategic combat with one another, and with the regulatory system, in order to exist on the air. This can be seen, for instance, in multiple

applications, by multiple community organizations, to use a single available frequency in metropolitan Toronto (CRTC, 2011e). Mining the value of the "junk bands", the creators of community wireless networks have opened physical and technical spaces where distinct processes of valourization, which in other contexts would be considered radical or contrary to accepted practice, are fundamental to the very architecture of the network.[46] Eschewing the potential for creating monetary value from something originally considered worthless, the emergence of these networks allows for values based on 1) the ability of individuals to communicate wirelessly, and 2) the ability of individuals and groups of individuals to create and share the technology required to do so. As with early shortwave radio broadcasters, the expertise of these groups has helped establish a social and political space oriented around the free use of the airwaves for the sake of communicating.

The emergence of cellular telephone technology and the subsequent convergence of this with Wi-Fi as a variable form of wireless communication (through the advent and spread of smartphones which may use either form of communication) brings two conflicted approaches to spectrum valourization into close contact. Cellular phones function on the basis of absolute control: a contractual agreement with a private service provider gives one the ability to use the spectrum according to the terms of that provider. Wi-Fi hardware operates according to a standard communicational protocol (referred to as IEEE 802.11) developed by the Institute of Electrical and Electronics Engineers (IEEE).[47] Projects such as community wireless networks, mesh networks and OpenBTS (which makes it possible to create one's own cellphone

46 Frequency ranges reserved for unlicensed consumer use are commonly referred to as "junk bands".

47 The IEEE is a non-profit organization of around 400,000 engineers from around the world. Among other things, they design, approve and promote the standards according to which wireless internet devices function. Online: http://www.ieee.org

network) push at the limits of the regulatory control that dominates much wireless communication, bringing into the open questions that have been central to communicational use of the spectrum since Marconi: who controls the spectrum?[48] How and to what end? This latest wave of innovative use challenging traditional regulatory limits builds upon other non-monetary methods for valourizing the spectrum. It demonstrates that citizens and technical experts may be one in the same and that this expertise can be used as a tool to build systems for free and independent, self-governed communication. Through demonstration of technical and organizational expertise, the use of the spectrum for communication (as opposed to monetary gain) has become something pervasive, not simply accepted but ubiquitous. How, then, can this complex system of value based on acts of free communication be integrated into a system of communication governance today grounded in acts of control and the abstraction of communication as a product or service?

### 2.1.4 Political economy as a tool of social change

Trawling the history of wireless communication technology, it is easy enough (if one adopts such a lens) to present a picture of extreme inequality in which citizens are not simply dispossessed by a regulatory system dominated by private interests but were never fully integrated into it begin with. However, an equally long history of citizens undertaking the task of building and making accessible the means of independent, uncontrolled or self-governed forms of wireless communication shows us that these marginal non-commercial uses of the spectrum are persistent. Their continued presence points to an alternative possibility that could perhaps be activated more broadly. Building a critical political economy of the spectrum means interrogating the entirety of the processes that make wireless communication what it is today.

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48 OpenBTS: http://openbts.blogspot.com/

Employing political economy as a tool of social change and not simply a means of analysis means recognizing systemic inequality as the starting point for analysis rather than its final illustrative product. It is in this dual sense that the political economy approach to understanding communication will be employed throughout the current study, fostering critique with the long-term goal of systemic change. As put forward in the previous chapter, changing the system is contingent on reconstructing governance processes in a new perspective in addition to epistemic change – changing the way we think about the spectrum to begin with.

**2.2 Advancing spectral visions / integrating spectral politics**

The spectrum exists in neither solid, liquid nor gaseous form. Endlessly ethereal, it is a thing which has been valued for its use rather than its essence. Perhaps because of this, our perception of the spectrum is shaped primarily by a tacit and unquestioned belief that we can only experience it through our use of it; therefore, the spectrum must be used. What, then, is the "essence" of the spectrum and how can it become a discernible piece of the vocabulary we use to talk about it? Is it possible to think about the spectrum without considering its uses and is it possible to think about its uses without ultimately and practically founding them on a system of monetary value? I pose these questions broadly. While meant to guide theoretical enquiry, they are also meant to be grounded in real life experience. As such, the answers to these questions may vary depending on the actors implicated in their response.

At the beginning of the previous chapter, I explained Lewis Hyde's illustration of the changes in English society's relationship with land and noted that he omitted the period before which land was used and controlled by humans. According to Hyde, English society's relationship with land began during the Saxon age when people

lived in villages and worked the land cooperatively (Hyde, 2010, p. 29). It may be difficult to imagine a time before we dominated the natural world, but that is not to say that we did not have a relationship with it before this relationship was codified in some set of social norms. When English society's relationship with land changed due to the introduction of new laws centralizing land ownership around elite individuals, the relationship between people and land became increasingly organized around not simply use but also the exchange of value. Crops were grown and land was worked not just for survival, but because people need to pay landowners for the use of land. The land itself then gained a value that was beyond mere sustenance. Our drive to understand the spectrum is necessarily structured around use because it is our use of it that gives it form. In practice, the use of the spectrum generates different sorts of value (monetary, social, political) through the facilitation of communication. The regulation that formalizes our use-based relationship with the spectrum is founded on a preconception that it must be used and controlled just as land should not lie fallow or unclaimed. Indeed, in Canada, just as there is no such thing as unclaimed land, there is no such thing as unclaimed spectrum – the state and its legal frameworks for ownership, private or public, underpin it all.

Thinkers have often attempted to describe the spectrum in some physical sense, ignoring the politics that underlie our social relationship with it. The use of geographic similes is common throughout the history of spectrum use and debate over its regulation. Consistently repeated and, in certain cases, officialized in policy, these ways of thinking about the spectrum have become basic concepts in the vocabulary used to talk about it. These comparisons have been used widely and repeatedly not so much because they are valid, but because they are easy to understand and provide a sort of imaginary familiar physical form for something that distinctly lacks such form.

As a preface to proposing a new way of thinking about the spectrum, it worth looking at these ideas, how they relate to the spectrum and how they have shaped our ability to talk about it and to question dominant notions of what the spectrum is and how we may relate to it otherwise.

### 2.2.1 Ether

Two inter-connected early structures placed atop the spectrum are the ether and the wave, both of which continue to be strongly associated with the spectrum today. "Ether" refers to the space – empty yet constituted of something or other – through which energy travels. In the 18th century, Issac Newton hypothesized that light propagated through a medium other than air and "early cosmological theory speculated that all interstices between matter were filled with an invisible fluid called ether" (Sandvig, 2006, p. 3). This idea of ether has been perpetuated ever since, accompanied by the notion that the spectrum is a fixed, known and measurable entity and that radio waves – energy – pass through this singular, continuous, measurable thing (Werbach, 2009, p. 883). This fixedness lives on in radio technology, creating spaces of exclusive use and ownership. Socialized as we are to the age-old radio dial, the spectrum is seen as a thing that is fixed and limited, composed of only radio waves of man-made origin while the physical form attributed to it in ether and wave serve to distract us from understanding the actual political underpinnings of the spectrum and its use. The ether is but a smokescreen.

### 2.2.2 Scarcity

The beginning of spectrum regulation in the early 1900s (spurred on by the Titanic disaster in 1912, which sank, in part, because of poor or non-existent coordination of radio frequencies (Lessig, 2002, p. 73)) introduced another concept that continues to

have an important effect on our understanding of the spectrum: scarcity. The logic of scarcity posits that the spectrum is a limited yet infinitely renewable resource. Due to its physical limitations as a resource, only a given number of users or devices can access it in a given location at a given time. Scarcity is central to the general approach to spectrum regulation today. On a scientific basis, it has been shown that the spectrum is not an innately scarce resource and that instead the limitations lie in our technical and political abilities to make use of it and to create ways of organizing its maximal use (regulation) (Werbach, 2009, 2011, pp. 40–43). Dominant spectrum technology and regulation have been designed with exclusivity in mind, avoiding a number of practices that allow for the sharing and cooperative use of this space (Werbach, 2009, pp. 887–898). As with the notions of ether and wave, scarcity has been historically presented and mobilized as a widely accepted truth. In this way, the spectrum is seen as something that is objectively scarce, not the result of political process or technical design, it is simply the fault of nature.

The idea of spectrum scarcity has led to a search for mechanisms by which to justly and efficiently allocate the spectrum as well as ways to talk about this process. While water has been employed at times to illustrate the propagation patterns of radio waves (Sandvig, 2006, pp. 4–5), this illustration has not been accompanied by coinciding legal and economic frameworks. Instead it is the simile of land and the legal and economic frameworks that apply to land management which have been subtly adapted to the special non-territoriality of the spectrum. As noted earlier, the idea of a property rights regime for the spectrum was proposed in the 1950s as a solution to seemingly arbitrary and inefficient methods for attributing radio licenses. Under such a management scheme, the spectrum is divided into distinct plots (frequency ranges), each limited in size so as to accommodate a limited number of users. Each plot is

then typically designated for a particular use, limiting the field while increasing market competition. While the spectrum is not land, this metaphor has resonated widely.

### 2.2.3 Land and location

The conceptual framework of land continues to be dominant in more recent proposals of how to envision the spectrum within the limits of a regulatory framework based on exclusive ownership. In contrast, the spectrum commons proposal attempts to take its inspiration from a fabled time when shepherds shared grazing lands and, out of collective interest, assured that grazing lands could be used collectively while not being exhausted by the overuse of any one individual. Before the imposition of private property, agricultural societies shared the land together – "in common." Basic rules were devised by the collective whereby land was shared to the benefit of all. The works I have encountered on the commons and spectrum, however, tend to make general claims and avoid developing comparisons with specific historical examples.

Proposals to create a spectrum commons (Benkler, 1997; Lessig, 2002; Werbach, 2001, 2003, 2009, 2011) argue that we should use a mix of cooperative policy and cooperative or "smart" technology to create a framework similar to that applied to earlier earth-borne fields. A spectrum commons approach does not necessarily exclude the notion of scarcity. After all, if we had unlimited access to land or spectrum, why would there be any need to share? While it makes a number of important proposals, even the idea of the spectrum commons remains bound by the land management systems from which it draws inspiration, relying on concepts of scarcity and allocation as much as any private property rights advocate. Grafting land-based politics onto the spectrum, the proposal of a spectrum commons diverts

focus from the real underlying politics of the spectrum instead of helping to bring them into focus. Thus, debate continues between experts advocating a "progressive" spectrum commons and experts advocating a "free market friendly" private property framework while questions of equal access, justice and inequality remain very much on the fringe.

Some recent attempts to think about the spectrum in a new way focus upon notions of location and situatedness as tools for opening spaces for discussion on technology, territory, and spectrum use. Operating more in the domain of active resistance and artistic practice than of adapting land management practices, these *provocateurs* employ a diversity of radio technologies. "Tactical" uses of radio technology tend to employ everyday broadcasting equipment to mount small-scale radio stations in response to certain events. For example, one such station broadcasting in Vancouver during the 2010 Olympics was used as a method for disseminating critical perspectives on the Olympics, while drawing public attention to their act of spectral appropriation (Murray, 2010). Projects like this one are often temporary, challenging regulation or taking advantage of regulatory loopholes (Joyce, 2008, p. 173). Locative media seeks to claim radio technologies in a different manner, relying largely on GPS technology in order to create location-sensitive works of art or other sorts of creation which are interpreted (heard, viewed, consumed, used) generally through GPS-enabled advanced cellular phones (smartphones). It has been posited that both tactical and locative media challenge the constitution of the spectrum into allocated blocks (Joyce, 2008, pp. 172–190) However, these media exist and can be consumed largely because of the allocated blocks of spectrum and communication devices that transmit and receive signals according to technical standards. While Joyce notes that a limitation in the thinking related to both these forms of spectrum

use is their "emphasis on technology" (Joyce, 2008, p. 185), I'd like to propose that this obstacle presents itself in every discussion concerning the spectrum, what it is, and how we relate to it. It's fair to say that for most people, the spectrum does not exist. Frequencies, wireless communications technologies, and the radio dial – and the social, political and economic uses that emerge from them - are the real palpable stuff that matters.

### 2.2.4 Life-media

The spectrum, as the potential of space (the space in which we and our greater environment exist) to transmit energy, is also a constituent part of the environment in which we exist. Our relationship with the spectrum, though, is primarily structured through our use of communication technologies, which rely upon the spectrum. By taking part in acts of wireless communication, we are essentially deriving use-value from the spectrum. This process is similar to the extraction of natural resources such as minerals and wood in that the thing which is extracted is valued in relation to its potential uses, be they practical or symbolic, not because it is innately imbued with value.[49] The value of the spectrum (and of these other things) is ultimately determined by political, economic and social processes that underlie its use.

There exists today no comprehensive agreement on what the spectrum is. In the history of its exploration, rarely are the political processes underpinning the spectrum evaluated alongside attempts to graft physical descriptors onto its non-physicality. Rarer still are attempts to create an integrated politics of the spectrum that at once recognizes its centrality in modern communicative society and the need for people to

49 To refer to something as a "natural resource" implies that one plans to use it. Such things do not exist as resources due to their nature, but rather due to ours.

play a defining role in these politics. As an attempt to fill these absences, I propose a novel and integrated approach to envisioning the spectrum, under the moniker "life-media". The concept of life-media is based on an understanding that some constitutive elements of our natural environments are so vital to the ways we exist as political, social and economic beings that they necessitate the highest level of participatory, transparent and democratic governance possible. This concept proposes that the politics around things cannot be separated from the things themselves, much as Langdon Winner sees technologies as being inseparable from concomitant political patterns (1979, p. 77). I will build this concept based primarily on the experiences of two Latin American social movements that provide substantial theoretical and practical examples of similar undertakings – the seringueiro or rubber-tapper movement in Brazil and the Uruguayan water movement. The seringueiro movement provides an example of how a community of people came to understand their direct physical environment as something that provided them with vital forms of sustenance. So central was this environment to their social, political and economic existence that the community argued they must be directly implicated in all facets of its management and use. These theoretical ideas of participatory governance then translated into social action and concrete political structures. The Uruguayan water movement serves as an example of how water – embodied in its natural forms but also in terms of water and sanitation services – became a broad social issue and a national movement crossing political and social barriers and culminated in the creation of the human right to water provided by the state. While the Brazilian example is limited to a singular community and geographic place, the Uruguayan example demonstrates a similar process taking place on a national scale.

Rubber extraction and the exportation of latex has been a significant industry in the

Amazon since the 1830s, in Brazil, Peru and Bolivia. Given the longevity of this industrial activity and its specific territoriality, communities have developed identities closely tied to this particular sort of industrial labour as well as the totality of their physical environment – la selva (the rainforest). (Porto-Gonçalves, 2006, pp. 81–91). Beginning at the end of the 19th century, pressures from the industrial system that relied upon latex as a raw material for manufacturing drastically changed the relationship between seringuiero communities and their natural environment. Whereas before this point, latex was valued for its potential uses on a small scale, the quickly-growing industrial system attributed value to the derivative uses made possible by manufacturing and the subsequent sale and use of latex-derived objects. With the intrusion of industrial and capital-intensive practices, the seringueiros and their extensive territorial knowledge acquired a new purpose and identity – that of simple manual labour specializing in the extraction of *materia prima* (Porto-Gonçalves, 2006, pp. 91–97). The ensuing story surrounding this community is extensive and has been treated elsewhere in great detail (Porto-Gonçalves, 2006). For the sake of the current work, I will focus on the process of construction of collective identity organized around the community's environment and the political possibilities that accompanied and were produced through this process.

The organization of the seringueiros as a political entity revolves around the figure of Francisco Alves Mendes Filho (Chico Mendes). Born into the seringuiero community in the 1940s, he co-founded the first rural workers union in the city of Brasiléia in 1975. In 1976, Mendes and other union organizers introduced the concept of "Empates" - community meetings with forest workers and their families organized around the preservation of their habitat, then being heavily deforested by commercial interests. The "Empates" played an important role in the consolidation of seringuiero

identity and this act of resistance attracted interest from other labourers around Brazil (Porto-Gonçalves, 2009, pp. 188–190). These meetings also set an example for subsequent political actions. Centring debate around the immediate community and their needs in loosely organized spaces, understandings of commonality and identity were iterated and given voice, defined and given structural form as a locally-defined and locally-oriented politics emerged, defined by the community itself.

The seringuiero movement gained force in the 1980s, adopting a discourse that affirmed the vital link between territory and identity, and established the politics of the movement in clear terms. "No hay defensa de la selva sin la defensa de los pueblos de la selva". "There can be no defence of the rainforest without equal defence of the people of the rainforest" (Porto-Gonçalves, 2009, p. 191). To assure the seringuiero community would play an important role in the governance of their environment, the movement developed and proposed a model (the Reserva Extravista or Extractive Reserve) for governing the complicated relationship between the rainforest, the seringuiero community, and the state. Taking inspiration from the creation of indigenous reserves in Brazil, the seringuieros insisted that their relationship was something more profound than "ownership" and should be formally recognized as such (Porto-Gonçalves, 2009, p. 192). The process for creating this model was structured around a series of open consultations that solidified the identity of the seringuieros and formalized their relationship with their physical environment (Porto-Gonçalves, 2006, pp. 249–278).[50] By building a governance model around the experiences of the communities most directly concerned, the model was centred on the needs of these communities rather than the eventual uses of the fruits of their

50 Until this point, the seringuieros were without legal standing on their lands, no matter the amount of time they have occupied them. Brazil had recently passed legislation creating reserves for indigenous tribes and this model was adapted by the seringuiero movement.

labour. As such, it demonstrates a connection between the environmental (both the rainforest and the broader space of the environment in which we exist), the social – the individuals that makeup these communities (Porto-Gonçalves, 2006, p. 262), and the political as embodied in the ability of the seringueiros to bring about the creation of Extractive Reserves.

The experience of the seringueiros introduces numerous inter-connected elements that nourish the concept of life-media. The first is that the importance of life-media is not primarily based on exchange value, monetary or otherwise. While some things constituted as life-media may, in a certain political-economic space, be acquired through exchange or have exchange value attributed to them, this status is the result of specific political, economic or social processes. Secondly, life-media are inherently political in that they privilege acts that support political and social life over monetary attribution or accumulation. Not only are they considered vital to a determined sort of human existence, but they are central to the ability of people to define the conditions of their own existence. As with the commons, the condition of "life-media" is not a natural one but a state prescribed in a "politics of possibility" (Gibson-Graham, 2006, p. xxiv–xxvii), the result of conscious decision-making by a group of people. Finally, life-media, like the creation and manifestation of a true commons, rely upon the opening of new political spaces, as well as the infiltration or appropriation of traditional political spaces, by previously absent or subordinate actors.

Water, like the spectrum, does not respect political boundaries, such as national borders, of its own accord (except, of course, rivers and lakes that do not cross international boundaries). An integral part of the way we live, water "is indispensable

stuff for human bodies, but also for the social fabric" (Swyngedouw, 2004, p. 1). That said, it is also the object of complicated sets of power relations that ultimately decide, in part, what sort of environment we live in (Swyngedouw, 2004, p. 23). In further developing the concept of life-media and grounding this concept in human action, I turn to the history of water governance in Uruguay where this complicated set of power relations recently experienced a dramatic reconstruction resulting in the creation of new political spaces for both debate and governance.

In Uruguay, water has long been culturally regarded as a common good, a status that has been attributed to the creation of the federal water company OSE in 1952 (Achkar, 2010; Ponce de León, 2010; Taks, 2008, p. 18). By the latter part of the 20th century, this centralized state enterprise had succeeded in extending water infrastructure to more than 95% of the population and sewage services to between 50%-60%. Given this high rate of accessible, clean water, "the general population considered that Uruguay had no water problems. It was a natural good, accessible, well organized and well administered" (Achkar, 2010). Therefore, access to clean drinking water was taken for granted. In 1992, Uruguay encountered the wave of neoliberal policies sweeping Latin America, and an attempt was made to privatize most state services. A popular referendum managed to counteract this, making Uruguay "the only country in the world that was consulted on full-scale privatization and which has rejected the possibility by referendum" (Barrett, Chavez, & Rodriguez-Garavito, 2008, p. 101). However, private discussions on gradual privatization of the water system began all the same and in the late 1990s water services were privatized in a small area of Maldonado called Manantiales and sold to the French multinational Suez Lyonnaise (Santos & Villareal, 2005, pp. 173–174).[51] An attempt to resist

51 Maldonado is the second most populous province or *departemento* in Uruguay.

privatization was made by public workers but, crucially, they were unable to formulate an argument that transcended their rights as unionized workers (Achkar, 2010). A further concession was made in 2000, effectively granting a 30-year contract for water services in the department of Maldonado to Spanish multinational Aguas de Bilbao Vizcaya (Marquisio, 2010).

The year 2001 brought new examples of privatization as neighbouring Argentina further sold off state services as a strategy for dealing with financial crisis by maintaining its borrowing relationship with the World Bank and International Monetary Fund (IMF) (Achkar, 2010; Olleta, 2007). The following year, privatization of water services became a growing topic of debate in various sectors of Uruguayan society as the sale of the Guaraní aquifer was proposed and private water prices rose, in some cases, by 1000% (Achkar, 2010).[52] In 2001, the government signed a letter of intent with the IMF which further advanced the proposition of extending water and sewage privatization to other regions of the country (Marquisio, 2010; Santos & Villareal, 2005, pp. 173–174). Finally, in 2002, a confluence of actors from the water company union (FFOSE) and various social organizations began to gain interest in the issue, ultimately creating the Comisión Nacional en Defensa del Agua y de la Vida (the CNDAV or National Commission for the Defense of Water and Life) (Achkar, 2010; Marquisio, 2010; Ortiz, 2010).

The water movement in Uruguay was one of several getting under way in Latin America, initially with no coordination between them. Eventually, through the World Social Forum in Brazil, members of the various national water movements came to understand that their governments were engaging in similar water privatization tactics

52 The Guaraní aquifer is one of the largest freshwater aquifers in the world and is situated beneath Uruguay, Brazil and Paraguay.

and attempting to enact similar legislation (Marquisio, 2010). Such coordination on the part of governments would suggest that similar cooperation could be undertaken by civil society groups opposing their actions. Unlike the case of the seringuieros where a movement developed under very unique conditions, the water movement was characterized by a mix of discursive and political tools developed at an international level, modified for their particular countries and contexts. The most important tool to emerge from this international space is the notion of the human right to water. At the heart of the proposition that water be considered a human right is an interpretation of the 1976 United Nations International Covenant on Economic, Social and Cultural Rights (La Iniciativa MERCOSUR, 2007, pp. 5–6; Office of the United Nations High Commissioner for Human Rights, 1976) by the United Nations' own Committee on Economic, Social and Cultural Rights known as General Comment 15. A non-binding interpretation of the Covenant, General Comment 15 lays out numerous legal arguments for believing that the human right to water exists according to both the Covenant and various other human rights declarations and treaties (La Iniciativa MERCOSUR, 2007, p. 6; United Nations, Economic and Social Council, Committee on Economic, Social and Cultural Rights, 2002). With this weighty tool in hand, local movements would be able to initiate conversations at the grassroots level.

The initial members of the CNDAV in Uruguay were parties already interested and involved in activism around water rights. Learning from the earlier failure of unionized workers to involve a broader public in their resistance to privatization, an invitation was sent to all political sectors, social movements and social organizations in the country (Achkar, 2010). The coalition embarked on a campaign that aimed to cut through partisan politics and to create a multiplicity of spaces for debate and popular education. The ultimate goal was to collect 250,000 signatures in order to

hold a popular referendum on a constitutional amendment that would create the human right to water provided for by the state. The question would be posed during electoral voting in the October 2004 election. There was at least one member of OSE union (FFOSE) in every city, town and village in the country, which proved to be a significant organizational strength. Their tactics were diverse and creative. Teachers opened up their classrooms to water company workers and campaigns were built up around World Water Day and Earth Day. One group of activists "rode for 23 days on horseback through the middle of the countryside" to spread the word to remote communities. They held plenaries in town squares, workshops in the streets and at weekly outdoor markets, and went door-to-door (Marquisio, 2010; Ortiz, 2010). A final step in the campaign was to create "Casas del Agua" or "Water Houses" whereby individuals would open up their homes to be used as neighbourhood organizational centres for distributing information and working with the national coalition. Each Casa del Agua was completely autonomous and able to take ownership of its own campaign, enabling them to engage with their neighbours as fellow citizens. Through this process the public gained ownership of the campaign and also came to understand its ultimate goal: guaranteeing the human right to water through popular ownership of the requisite political and regulatory processes (Achkar, 2010; Ortiz, 2010). Ultimately, 300,000 signatures were collected (Marquisio, 2010) and 65% of the population voted in favour of enshrining the human right to water as an article in the national constitution (Santos & Villareal, 2005, p. 173).

The process of collectively recognizing water as a human right which cannot be provided by private means created a number of new public political spaces. During the campaign, spaces emerged where this idea was debated, strengthened and rebuilt in the local context. Following the successful referendum, other political spaces

emerged that were designed to regulate and ensure continuous public participation in water governance. The passage of the referendum immediately mandated the creation of the National Directorate of Water and Sewage (DINASA, now called DINAGUA) and planted the seeds of another body – the Assessorial Commission on Water and Sewage (COASAS). DINAGUA is the federal body charged with overseeing the use of water policy, water resources and sewage infrastructure in Uruguay (Genta, 2010). Following the referendum, law-makers and civil society groups spent five years collaboratively developing new environmental legislation which includes the national water policy (Achkar, 2010). Adopted unanimously by all political parties, the law created COASAS, which provides an official venue through which civil society can ostensibly take part in the oversight, design and implementation of water policy.[53]

In the case of the seringuieros, a narrowly-defined community with a high level of commonality undertook and successfully completed a process by which they took collective control of their social, political and economic environment by reorienting the manner in which this environment – the rainforest – and their activities in it were valued. Ultimately the seringuieros became powerful actors by creating new political spaces for designing and implementing their ideas. The phenomena of the Uruguayan water movement advanced the seringuieros' model by undertaking a similar task at a national level and appealing so successfully to the general population that traditional barriers of all sorts – religious, ideological, political – were broken down (Marquisio, 2010). In place of these barriers, the movement built organizational and ideological links based on "solidarity, the free exchange of ideas, reciprocity, and non-monetary value" (Marquisio, 2010). Water, previously taken for granted, had become

53 These systems for public participation are far from perfect and civil society participation in water governance has been slow to develop (Genta, 2010; Marquisio, 2010). My goal here, however, is not to be critical but to tell the beginning of a story that is in continuous development.

something of profound social and cultural value upon which all individuals depend, no matter their vocation, economic status or political stripe. The ability to preserve water as a common good is directly linked to the ability of Uruguayan society – the community – to exercise real ownership of the political spaces, institutions and processes connected to it. In both examples cited here, popular reclamation of the political was triggered by an attempt to submit the thing in question – water and the rainforest - to a strictly monetary system of valourization.

### 2.2.5 Sustainable spectrum

The proposition of life-media posits that some things in our world are so central to our existence that they should be explicitly valourized to a higher degree than, or to the exclusion of monetary forms of valourization. It proposes that said things should be subject to transparent and participatory forms of governance and that these processes of valourization and governance cannot be separated from one another. As argued in Chapter One, the ubiquity of wireless communications in modern society and its extension into political, cultural and economic life is such that the spectrum – in that it is both the environment in which we exist and the foundation of all wireless communication – can be constituted as a form of life-media. The spectrum is a basic human need central to our ability to take part in public life and therefore the manner in which we organize infrastructures for accessing and using the spectrum is morally, ethically and politically significant. It is important, then, to equally ensure that these infrastructures, the limits of which have been demonstrated and will become more defined through the case studies that follow, become and remain sustainable.

Sustainability is a common motive found in the seringuiero movement, the Uruguayan and international water movements, and perhaps a future spectrum-oriented social

movement. By sustainability, I mean the integration of natural systems with human patterns so that each endures without detrimental effect to either (Early, 1993). In each case presented here, the use of nature for sustaining society had been well accepted and a systemic relationship created and maintained. However, this relationship was interrupted and the sustainable existence of both the immediate communities and the natural resources was threatened when the prime motive for use (or exploitation) became the generation of monetary profit. The current cycle of communication infrastructure convergence, presented in Section 1.2, presents a similar critical juncture with regards to the future of the spectrum and our social relationship with it. Given the ways in which we use and manage the spectrum today, there is a natural limit to its use. This can be seen, for instance, in the rush to "open up" new spectrum space for telecommunications use through digital television transition, a process that began in the 1990s. That said, recognizing the natural limit of the spectrum and designing strategies to better work within this limit for a short period of time is not the same as eliminating the limit by changing practices of use and regulation. Changing this limit is not necessarily an easy thing to do given that it benefits the forces that control the majority of the spectrum today by allowing them to consolidate this vital communicational resource and thus its concomitant social, economic and political power. Citizens, in that they are communicative social beings, have a vested interest in seeing that the future of the spectrum is a sustainable one. What, then, impedes the ability of citizens to substantively debate the place of the spectrum in their lives and to perhaps undertake a reappropriation of the politics of the spectrum? This question will drive the enquiry undertaken in the following three chapters. In detailing impediments, I also seek to show inherent opportunities.

## 3. Methodology

Most communication studies research concerning spectrum policy limits itself to one well-defined field of spectrum use, be it radio broadcasting (McChesney, 1992; Raboy, 1990b); the telecommunications industry (Babe, 1990; Winseck, 1998); the enlarging of telecommunications and computing into what has been called "information" (Braman, 2006, 2004; D. Schiller, 2007); and the new frontiers brought about by innovations such community wireless networks (Community Wireless Infrastructure Project, n.d.; Powell, 2008; Powell & Shade, 2006), open spectrum (Werbach, 2001), or white space (Meinrath & Calabrese, 2008). Much of this work draws on common theoretical foundations and deals directly with communications policy systems. Together, the objects of this research compose the infrastructure and content of our broad communications environment. Very quickly these disparate parts are converging into a singular communications and media system with policy development and change cautiously following behind. Academic research has proceeded with equal caution, noting that technological and policy convergence is an important thing to address yet making few methodological or theoretical changes in its own practice in order to do so. My goal here – in the execution of this research project and in its methodological design – is to evaluate the processes by which the concept of the spectrum is constructed, the extent to which citizens can take part in these processes, and the extent to which there exist social and political spaces to debate – and thus to challenge and perhaps modify – dominant notions of what the spectrum is and how it is used. The comparison focuses not so much on "best practices" but rather how two countries at different stages in the development of their regulatory systems approach spectrum policy in light of ongoing and impending convergence.

This dissertation focuses on an extensive comparative case study of spectrum policy in Canada and Uruguay. The previous chapters have presented the rationale for such a study while the current one will detail the research design, data sources, collection and analysis techniques and propose a methodological innovation: inverse international development research. It will conclude by noting potential limitations of the methodology in order to anticipate and address any issues that may surface.

### 3.1 Justification of sites

International comparative research has a long history accompanied by a variety of definitions and strategies (Hantrais, 2009). This methodological strategy can be used for a number of purposes, such as creating a "best practices" standard based on the analysis of several national contexts (AMARC-ALC, 2008; Gómez, 2007); developing broad-reaching theories through the analysis of different nations undergoing political transition (Price, Rozumilowicz, & Verhulst, 2002); exploring decision-making processes across different countries and cultures (Bessette, 2006); and examining multiple nations of similar governmental structure in order to tease out critical differences (Bernard Jr, 2008). Comparative research of this sort can be particularly useful for developing a critical perspective on models, concepts or objects that are often characterized as universally accepted or highly regarded examples of policy practice. Two such concepts examined in this dissertation are the notions of governance and government – in particular, governance of the spectrum and the structuring of government around this task. Good governance and good government are often presented as universal standards that should be applied worldwide, even more so in countries that are "developing" (Andrews, 2010, pp. 7–8). However, methods of government and governance that have developed within different sociopolitical traditions or have been made possible by certain sociopolitical

particularities, while not symmetrical to "best-practices" models, may still be "good". In this dissertation, I assert that they may even be better than accepted practices or models that have become universally accepted and promoted.

I have selected Canada and Uruguay as research sites according to four key factors that will be evaluated and compared according to the analytical methodology denoted in the following sections. The cumulative analysis of these factors will allow for a detailed analysis of access to the spectrum-oriented policy systems of each country.

**Factor 1: Coinciding flux in policy**

Both Canada and Uruguay are at crucial turning points in the development and application of communications governance in general and spectrum governance in particular. In Canada, the general approach of the State to spectrum and communications governance is in a state of extreme flux as demonstrated by the recent over-ruling of the CRTC by the Minister of Industry in matters of telecommunications governance regarding the cellular phone industry (CRTC, n.d.; Government of Canada, Privy Council, 2009); Parliamentary review of a CRTC decision concerning internet traffic management (Von Finkenstein, 2011); and an expressed desire by the chairman of the CRTC for a new unified communications act (CRTC, 2011d). Even more recently, in August 2011 the CRTC issued a report on convergence (updating one issued a year earlier) stating that:

> As the digital economy becomes more sophisticated, policy, legislation and regulation must adapt. Areas that can be further deregulated—or in which new approaches may be required—are critically important to address. These areas include:
>
> - ensuring fair and non-discriminatory access to networks
> - increasing spectrum resources to meet Canadian demands
> - creating new regulatory approaches to support innovation,

access to affordable services and the creation and promotion of high-quality Canadian content, and
- addressing consumer concerns. (Government of Canada, 2011b)

In addition, since the last major spectrum auction in 2008, there has been increasing debate on opening the country's telecommunications sector up to foreign ownership (Garneau, 2010) that would potentially permit foreign ownership of spectrum that, according to regulatory delimitations, resides in Canada and is essentially the common property of Canadian citizens. Canada's communication policy system, it appears, is quickly being opened up to regulatory change on multiple fronts, affording the possibility of either more centralized or more democratized control.

Uruguay's communications regulator, URSEC, was created in 2001.[54] URSEC is chiefly responsible for regulating postal services and the use of the radio spectrum for radio, television and telecommunications. Radio and television broadcast licenses, however, are, and always have been, granted directly by the President. Community radio was legalized in 2008 yet the country still lacks a telecommunications act and has no policy whatsoever pertaining to the commercial broadcasting sector (Light, 2011). Throughout 2010-2011, a broad-reaching audiovisual services law was developed by a committee representing a diversity of actors (Comité Técnico Consultivo, 2010) but has not yet been enacted. Since coming into power in 2005, the current government has enacted substantial new pieces of communication and media-related legislation such as the legalization of community broadcasting (Parlamento del Uruguay, 2007) and an access to information law (Government of Uruguay, 2008). It

54 Unidad Reguladora de Servicios de Comunicaciones or Communications Services Regulatory Unit.

recently introduced policy on digital television broadcasting (Government of Uruguay, 2012) and plans to develop new broadcasting and telecommunications legislation (Gómez, 2010). In August 2011, it was announced that Gustavo Gómez, national director of telecommunication and the key figure in the ongoing re-development of Uruguay's communication policy system, would be losing his job in October 2011 (Uval, 2011).

**Factor 2: Contrasting political traditions**

The Canadian system is organized around provincial and federal government powers and the rule of law. While citizens are encouraged to be active at local and provincial levels of government, citizen participation at the federal level in a non-electoral manner is difficult (Smith, 2004, pp. 92–93). Constitutional change is only possible as a result of negotiations between the provincial and federal governments (Smith, 2004, pp. 58–59). While treating the spectrum differently would not necessarily require constitutional change in Canada, such a strategy could be adopted in Uruguay. The Canadian political system contrasts greatly with the republicanism of Uruguay in which the individual is highly regarded as a participatory political actor. Changes to the constitution and federal law can be undertaken by popular referendum and have occurred several times in the country's history on issues such as support for the military dictatorship (González, 1991, p. 53), amnesty for participants in the military dictatorship (Gallardo, 2006, p. 462), privatization of state services (Barrett et al., 2008, p. 101), and the human right to water (Grosse, Thimmel, & Taks, 2004). While it is possible to analyze each political system to the exclusion of the other, a comparative analysis will permit for a deeper evaluation of policy and governance practices by providing counterpoints tied to social and political systems as opposed to generalized standards.

**Factor 3: Complexity and fixedness of policy and legislative systems**

Canada's broadcasting law was first introduced in 1932 and has been modified many times since. Its *Telecommunications Act* came into effect in 1993 and has also been modified many times. The history of both acts and previous laws governing telecommunications (i.e. Telegraph acts), as well as the bodies that take part in their administration have contributed to the establishment of a communications policy system based on decades of procedural precedence which influences the interpretation and creation of further policy and legislation. Additionally, the connections that have developed between institutions and individuals involved in communication industries and regulation is an important factor that should not be underestimated in determining the potential for changing the regulatory system (Raboy, 1995a; Winseck, 2011). The longevity of Canada's communications regulator, the CRTC, may be seen as a sign of stability but has also been identified as a prime object of regulatory capture whereby the regulator "either lost, or never had the independence to make professional decisions on their merits because of undue influence either from politicians, politically driven Ministries, or the regulated monopolies" (Melody, 1997, p. 195). Additionally, Industry Canada and its predecessors have been involved in Cabinet-level over-rulings of the CRTC several times since the 1980s (Winseck, 1998, p. 199). Today, Industry Canada is the most heavily lobbied section of the federal government, having engaged in 1604 registered meetings with lobbyists over the course of 2011 (Office of the Commissioner of Lobbying of Canada, 2011). The existence of established lobbying practices and of public forums has led to a scenario whereby the private sector finds lobbying a more effective practice for advancing their policy priorities than public forums while public interest groups put a lot of faith in public forums (Raboy, 1995a, p. 23).

Uruguay, while it has a high level of cellphone penetration (140.2% in 2011) (URSEC, 2011), has no telecommunications legislation to speak of and very little telecommunications policy outside of the attribution of frequencies. Similarly, the office of the President has licensed 279 commercial radio broadcasters (Unidad Reguladora de Servicios de Comunicaciones, 2010), yet there is no policy pertaining to their operation. While there is evidence that commercial broadcasters have considerable political power (licenses are granted by the president and are eternal), civil society has demonstrated a high capacity for policy-making of its own as shown in recent design, implementation and active use of access-to-information legislation (Asociación de la prensa uruguaya & CAinfo, 2011; Lanza, 2010).[55] The counterpoint provided between the Uruguayan and Canadian legislative and policy systems allows for an analysis of civil society capacity for policy development, state capacity for policy development and the extent to which each system facilitates broad participation in policy-making.

**Factor 4: Civil society roles**

Spectrum-oriented civil society groups in Canada and Uruguay serve different purposes and organize in different ways and in varying proximity to government and regulators. In my personal experience as a community radio advocate, Canada's large civil society groups tend to organize around specific media and react to the actions of regulators rather than engaging in proactive policy development. Community radio and television organizations are organized and funded to varying degrees and tend to group together individual broadcasters into national-level advocacy groups in order to attain and/or maintain a collective voice in the policy system. There is no active

55 In November 2011, a Uruguayan coalition organizing around access to information won a court challenge to force URSEC, the communications regulator, to reveal the subscriber statistics of private television companies (Asociación de la prensa uruguaya & CAinfo, 2011).

collaboration between these groups and spectrum-oriented civil society organizations such as community wireless networks, nor does there appear to be any active policy collaboration between the broadcasting movements and other technology and communication-related civil society organizations that organize around themes such as access to information and privacy.[56] Advocacy undertaken by organized civil society falls into two main categories: representation within policy processes and lobbying within the policy system.

Spectrum-oriented civil society organizations in Uruguay have grown out of the community broadcasting, freedom of expression and human rights movements. Thus, while community broadcasting has only recently become legitimized within the policy system, certain individuals have been active in the freedom of expression and human rights movements for a longer period and have brought their legal expertise to this new domain.[57] These civil society organizations generally undertake three distinct activities: organizing community radio stations; developing and proposing communications legislation and policy; and actively participating as decision-makers and policy-makers within the policy system.

### 3.2 Research questions and analytical grid

While I do seek to make claims as to how the spectrum should be utilized, I want equally to determine the way that debate of this sort can be nourished and how decision-making can occur on a broad social scale. Thus, I aim to interrogate the factors that impede and enable such activity. The ability of citizens to participate in

56 In 2009, I was asked to broker a meeting between Île sans fils and AMARC to explore the possibility of community wireless networks and the international community radio movement making official links. While supporting one another's work, they saw no benefit to collaboration.

57 A number of my interview subjects are university professors and/or legal experts who have been active as civil society organizers and policy developers, and also work within the policy system.

policy-making is not a given, even in the most democratic of political systems where participation and democracy are given lip-service while regulators provide a friendly face for an ultimately inaccessible regime. Young has noted that "inequalities in power and resources frequently lead to outcomes such as these, where some citizens with formally equal rights have little or no real access to the fora and procedures through which they might influence decisions" (2000, p. 54). The following questions will guide my analysis in order to account for different sorts of inequality in access to spectrum policy-making, and enumerate factors, models or other phenomena that may be employed to counteract such inequality. In the systemic analysis detailed below, each of these research questions will be applied to a discrete focal point in the communications policy system (see analytical grid below).

A. How can a system of value based on acts of free communication be integrated into current systems of communication governance?
B. What obstacles impede the ability of citizens to substantively debate the place of wireless communication and of the spectrum in their lives?
C. What factors enable the substantive intervention of citizens in wireless communication governance?

| | | | | |
|---|---|---|---|---|
| Integration of alternative value set | Policy venues | Policy and political processes | Regulatory institutions | Civil society |
| Obstacles to public participation | Policy venues | Policy and political processes | Regulatory institutions | Civil society |
| Enablers of public participation | Policy venues | Policy and political processes | Regulatory institutions | Civil society |

**Table 3.1: Analytical grid**

### 3.3 Passive structural analysis

Research on communications policy is often undertaken in the tradition of the political economy of communication and tends to focus on institutional structures, but not necessarily the power relationships between various actors that constitute these institutions nor the relationships with individual citizens or non-professional actors inside and outside of the policy system. Such an approach is useful for accurately illustrating system design and demonstrating how the processes within the system should work, but is otherwise limited. In order to exercise the usefulness of a political economic approach to analysis while correcting for its identified limitations, case study analysis will be conducted in two steps. The first analysis will treat the policy structure as it exists and is presented as a system, identifying the various fora within it and the actors that participate in them. The second analysis will test the capacity of the system to permit for citizen participation against the experiences of various key informants. The corpus designated for the first analysis consists of the following elements:

- All federal legislation in Canada and Uruguay that underlie the spectrum-related communications systems in each country;
- Submissions to Industry Canada concerning spectrum auctions and other sorts of spectrum allocation (there is no Uruguayan equivalent);
- Standing committee hearings pertaining to studies, legislation or policy fora or instances related to spectrum use and allocation;
- Documentation of ad-hoc committees related to spectrum governance;
- Documentation of task forces related to spectrum governance;
- Documentation of official review panels related to spectrum governance;
- National ITU consultation mechanisms concerning spectrum policy.

### 3.4 Active structural analysis

The first analysis is used to demonstrate the boundaries of the policy system, identify actors within this system, and to identify pre-existing venues for discussion and debate on spectrum policy. Through an active analysis of this structure, I will determine the extent to which citizens and civil society organizations can and do participate in spectrum policy decisions and what obstacles or enablers may exist. Through the use of semi-structured interviews with key informants as well as participant observation of certain processes and events, I will further probe the system laid out in the first analysis. These interviews will also be used to identify what kinds of conceptualizations of the spectrum exist among these actors and attempt to discern the origins of their knowledge. While a certain amount of analysis can be pursued with the use of publicly available data, the experiences of these various informants provide critical insight into a system that is sparsely documented. Pursuant to ethical guidelines presented to and approved by the Comité institutionel d'éthique de la recherche avec des êtres humains of the Université du Québec à Montréal, all informants were given the right to anonymity as well as choice of interview location and interview language.[58] Interviews were conducted in English, French and Spanish.

Interview subjects come from the following communities:

- Broadcasting & telecommunications regulators;
- Spectrum regulators;
- Spectrum-oriented civil society organizations;
- International Telecommunications Union;
- Elected officials who oversee spectrum-related legislation;
- Independent experts on spectrum and water policy;

58 A copy of the ethics certificate is included in Annex 1.

- The Uruguayan water movement;
- A former executive officer of Bell Canada;
- Current and former government ministers overseeing spectrum legislation;
- Representatives of the Uruguayan water and sanitation corporation, and water regulator.

In carrying out my research, I attempted to maintain a balance between the various stakeholders I interviewed, striking a balance among political parties, regulatory bodies, the private sector and civil society organizations. A full list of interviews as well as attempted interviews can be found in Annex B.

Additionally, a certain amount of quantitative analysis is performed on publicly available data. The first quantitative analysis examines participation in five recent spectrum policy fora: the Technical Advisory Committee on Broadcasting (B-TAC), the Task Force on the Implementation of Digital Television, the Task Force on the Implementation of Digital Radio, and the Digital Radio Co-ordinating Group. The second quantitative analysis examines a sampling of communications lobbying activity in Canada with the use of the federal Registry of Lobbyists. Unfortunately, no such registry exists in Uruguay.

### 3.5 Discursive analysis

In the first two chapters of this thesis, I focused extensively on the ways in which the spectrum has been conceptualized through regulatory processes and various practices related to the creation of its use-value. In the second half of this project, founded largely on independently collected primary data, I will, in part, continue this practice by seeking to determine the variable conceptualizations of the spectrum according to

my different research subjects. Understanding such intricacies will help in determining "the role of social relationships in the minds of social actors" (van Dijk, 1993, p. 251), the social relationships here characterized by those related to the provision or creation of wireless communication and those that are constructed through wireless communication. Where does civil society knowledge of the spectrum originate and how is it reproduced? Are interview responses from regulatory representatives, for instance, consistent with the dominant political economy of the spectrum or is there room for conceptual debate within the policy system itself? Our communication and media system is, essentially, a social and political system – one defined by humans rather than technology. Based on responses of individuals within the regulatory system, I aim to determine potential channels for opening debate and discussion on spectrum policy.

### 3.6 Data and its sources

Data collected for the analysis described above comes from various points of origin. Several of these have not yet been documented in academic work and thus warrant special attention.

#### Technical Advisory Committee on Broadcasting (B-TAC)

The B-TAC is an ad-hoc committee coordinated by Industry Canada. It deals with all manner of broadcasting policy and has existed since 1966, predating both the CRTC and the Ministry of Communications. It's membership is open and it meets every six months. A limited set of minutes are available online (2004-2009). Key informants at Industry Canada put me in contact with the B-TAC secretary who provided me with all available missing minutes (2004-2006).[59]

59 B-TAC: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf05460.html

**Reports on Convergence**

I examine three reports on convergence in Canada, one published by the Communications Research Centre in 1992 (Phillips et al., 1992) and the other two issued by the CRTC in 2010 and 2011 (CRTC, 2010a, 2011a). While there is an official record of the first, it is not easily accessible and I discovered it among a cache of documents hosted anonymously at National Capitol Freenet.[60] The second document, while issued by the CRTC, is highly unusual in its design. While it appears to be a formal analysis of the future of converging technologies and economies, it was, in fact, prepared and issued by CRTC staff rather than by the Commission as a body (CRTC, 2010d). The third report updates the first and was issued as an official report of the CRTC. It notes that the trends identified in the report of the previous year have accelerated more quickly than predicted.

**The ITU and domestic consultation on spectrum policy**

Over the course of a semi-structured interview with three Industry Canada staff members, it was explained to me that every member state of the ITU carries out a domestic policy consultation which then feeds into official governmental positions concerning various policy discussions internationally (Industry Canada, 2010b). Having determined that all Canadian members of this process were either government staff, professional consultants or corporate executives, I decided to attempt to join the Canadian National Organization (CNO), the ongoing Canadian consultation group. From the beginning of this process, I identified myself as a researcher interested in understanding how the system works. I was informed that the best way for me to become involved would be to join one of 14 National Study Groups. Finding nothing

60 National Capitol Freenet is an independent internet service provider in Ottawa that has been operating since 1992. Online: http://www.ncf.ca

remotely related to the social aspects of technology, I decided to join the Future Networks National Study Group. While this activity would normally be classed as "participant observation", the group (an email list) has been almost entirely silent. Before being granted membership, I was interviewed and briefed (by telephone) by the chair of this National Working Group, Joe Zebarth, who explained to me what sorts of information I would have access to and what sort of decision-making powers I would have as a non-member of the ITU. Industry Canada provided me with extensive documentation on this process as well.

**Lobbyist data**

Canada's *Lobbyists Registration Act* came into effect in 1989 (Government of Canada, 2008) and its online Registry of Lobbyists was created in 2005 (Office of the Commissioner of Lobbying of Canada, 2010). Registration by lobbyists is both mandatory and voluntary. Today, the Registry holds data on all registered lobbying activity in Canada. While I was able to collect data, the search functionality of the Registry is very limited. I requested and was furnished with a spreadsheet consisting of all lobbying that has been registered from the beginning of online collection in 2005 until April 2011. Uruguay has no such legislation or registration system.

**Participant observation**

While conducting field research in Uruguay, I was invited to observe and participate in two activities strongly related to my research. The first was a two day workshop with members of Sutel, the union of workers at Antel, Uruguay's state telecommunications corporation. The focus of the event was to discuss how to change the discourse on telecommunications in order to frame it in social terms. The second event was a meeting of the board of directors of ECOS, one of Uruguay's

community radio associations. In each case, I presented myself as a researcher and observer and participated when asked to do so.

### 3.7 Inverse international development research

In recent years, researchers, citizens and politicians have sporadically begun to observe and appropriate unique practices undertaken in the "developing world". Participatory budgeting is perhaps the best known example. First developed in Porto Alegre in 1989 (Chavez & Braathen, 2006, p. 1), it has been introduced and adapted in cities around the world. In Canada, participatory budgeting has been introduced in different forms in Montréal, Vancouver, Toronto, and Guelph (Chavez & Braathen, 2006). Similarly, urban agriculture has been highly developed in cities of the global South and has been the object of extensive research in the North since at least the 1990s.[61] While North America's ability to cultivate food in close proximity to living quarters has decreased incredibly since World War II, this practice has not disappeared in the developing world. Rather than "reinvent the wheel" it is worthwhile to examine the state of the art elsewhere and determine if the practices of others can be adapted here (Duchemin, 2011). Therefore, one can say that there is an established multidisciplinary pattern of looking outside of North America and Europe for models of social, political, economic practice with the goal of adapting these models domestically. I would like to suggest that this pattern is not simply a matter of isolated research techniques or instances, but an orientation that warrants denotation as a methodological approach distinct from much other international comparative research carried out in universities and international development organizations.

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61 For instance, a search of IDRC's project database on 17 August 2011 showed 217 funded projects since 1998.

When preliminary work on this research project began, I had not adopted such a methodological stance; community radio was still illegal in Uruguay, no matter that a government advocating its legalization had been in power for two years. When this form of media was legalized in 2008, it appeared that perhaps a new model of participatory communications governance was emerging. As with the popular recognition of water as a human right, this did not occur due to the imposition or adoption of a "Northern" or best-practices model of governance. To the contrary, these things happened due to a number of unique factors including, but not at all limited to, state policy-making capacity, development of political discourse, and the autonomy of civil society (Light, 2012a, pp. 63–64; Marquisio, 2010; Ortiz, 2010; Santos & Villareal, 2005). By recognizing that policy change is tied to social and political systems one can determine what factors make such change possible. Examining the Canadian situation, one can then attempt to determine the extent to which our social and political systems are integrated with the policy system and the potential for advancing policy change in a similar fashion.

### 3.8 Limitations of my methods

This research project brings together thoughts and data from many different places. Potential criticisms of the methodological framework employed include:

- the use of multiple data sets of different sorts;
- the analysis of a large variety of policy venues;
- introducing the unproven methodological innovation of inverse international development research;
- the difficulty or impossibility of accurately documenting the spectrum policy systems of two countries;
- assuring analytical continuity of data in three languages (English, French,

Spanish);

- my subjectivity as an interlocutor within the policy systems I am analyzing.

This research project, by definition, casts a broad net and aims to touch every policy process that concerns the use and/or allocation of the spectrum for communication and to determine the extent to which citizens can take part in them. As a citizen, I believe that I have (and everybody else has) the right to understand exactly how the systems that govern our society (and by extension our communication systems) operate. While the policy systems of Uruguay and Canada do not necessarily mirror one another, much can be gleaned from their differences and the experiences of individuals working within (and outside or on the fringes of) each system. Quantitative analysis is utilized both to illustrate unavoidable inequality in access to policy venues and as an attempt to begin making connections between lobbying activity and communication policy in Canada.

Concerning the assurance of continuity in my analysis of data that exists in English, French and Spanish, I can attest to fluency in all three. All interviews were conducted in the interview subject's language of choice. Transcription was performed by contracted third parties, each working in their first language.

Research methodologies can be incredibly useful tools for organizing thought and action. Having recognized a pattern of research being conducted for similar reasons in a variety of fields, it is important for me to distinguish inverse international development research as something distinct.

A potentially more serious criticism, and one which is perhaps the hardest to correct

in the eyes of others, is the subjectivity of a researcher's perspective, which is informed by their personal experience. While some researchers may become closer to their research subjects as time advances, my experience has been quite the opposite. Since the beginning of my doctoral studies, I have purposely limited my activities as an activist and advocate, taking the distance I believe necessary to adequately and critically assess all of my research subjects. At the same time, my background and identity as an activist and as a policy advocate has helped me gain access to and the trust of many of my key informants. That said, all interviews were conducted according to strict ethical guidelines including the signing of consent forms by both parties. This work aims to critically analyze all parties that fall within its scope. After all, a good doctor should be able to tell his best friend he has cancer.

## 4. Case Study: Canada

Canada's communication policy system is complex, consisting of multiple policy venues residing within government ministries, an "arm's length" regulator, and Parliamentary committees. In addition to these fairly public venues, two other components of the communication policy system exist that are perhaps as important to the regulation of the communications and media system as they are obscure: Canada's formal relationship with the ITU and the domestic consultative structure that informs this relationship, and the federal spectrum lobbying environment. The following case study of Canada's communication policy system focuses, above all, on policy related to the radio spectrum. In doing so, it investigates the differing treatment of the spectrum according to type of use and differing opportunities for access that are provided (or not) to the public in policy-making processes and venues. The goal here is to provide a comprehensive mapping of Canada's spectrum-related communication policy system from law-making to policy-making and policy enforcement, and to analyze the extent to which the participation of the public – embodied either in individual citizens or in organized civil society – is enabled or obstructed. The analysis relies heavily upon interviews with law-makers, policy-makers and civil society representatives, and publicly-available information on participation in policy venues. All but one attempt to gain similar insight from the private sector were unsuccessful.[1]

### 4.1 The state of the spectrum in Canada

Often, general assessments of the state of spectrum use and the organization of

1 Interviews were requested with the Canadian Association of Broadcasters (CAB) and the Canadian Wireless Telecommunications Association (CWTA). A successful interview was conducted with Lawson Hunter, a prominent Canadian telecommunications lawyer and former executive vice-president and chief corporate officer of Bell Canada from 2003-2008.

spectrum licensing describe a delimited space referred to as "the market", a space that is evoked as something at once geographic, economic and political. "The market" in this sense is geographic because spectrum licenses are organized according to specific geographic areas of relatively small size. For instance cellular carriers will have several licenses to provide cellular coverage across a province as opposed to having one license for the entire province. Similarly, the CRTC, Canada's broadcast regulator, considers economic viability in the context of competition for advertising revenue when evaluating radio and television broadcast applications. "The market" is economic in that, in this case, it refers to a delimited geographic area where the regulator determines that a certain number of business undertakings are economically feasible given the potential for revenue generation. Finally, "the market" is political in that it is not a naturally occurring phenomena but is rather created and structured by the politics of the spectrum. As this chapter will demonstrate, the composition of actors with access to the politics of the spectrum in Canada mirrors, to a large extent, the composition of actors with access to the spectrum itself. This, I will show, is problematic.

In terms of radio policy, the term "market" refers to measurement parameters determined by the Bureau of Broadcast Measurement (BBM), a private entity that tracks the listeners of radio stations that pay for this service. "Market" is a term so fundamental to the regulatory understanding of radio broadcasting it is found in the *Radio Regulations* that provide the basic legal structure for Canada's radio stations (CRTC, 1986). In telecommunications, however, "the market" is defined not so much as a discrete and broadly applicable standard of measurement but as an approach to the delivery of services one needs to communicate. Evolving from telegraph services to today include wire-line and cellular telephony, wire-line and wireless internet, and

satellite provision of telephony, internet, radio and television, the landscape of telecommunications in Canada changed rapidly over the last 30 years. Until the 1980s, telecommunications regulation was highly decentralized and the federal government's jurisdiction included only Quebec and Ontario (Schultz, 2003, p. 111). All other provinces operated provincially-owned telecommunications companies at this time which meant that on a national level, telecommunications was about more than the business of capital accumulation. Instead, provincial governments were able to develop telecommunications as a means for supporting local development. In the 1980s and 1990s, provincially-operated telecommunications companies were gradually privatized under the guidance of the federal government. During this time, the *Telecommunications Act* was reoriented towards the interests of private enterprise (Winseck, 1998, pp. 228–234) while expanding the reach of the regulator by appealing to the courts as opposed to engaging in legislative reform (Schultz, 2003, pp. 130–131). Once diverse, Canada is today faced with what Dwayne Winseck has described as "one of the most concentrated set of TMI (Telecom-Media-Internet) industries among the developed capitalist economies" (Winseck, 2012). SaskTel is the only remaining provincially-operated telecommunication company. In place of the others are the market-driven giants Rogers, Bell, Telus (who all operate in a number of provinces), MTS (formerly Manitoba Telephone System, privatized in 1996) and Quebecor, the dominant media company in Quebec which has also recently become a cellular and wire-line telephone provider with spectrum holdings throughout the country. While the almost absolute market-oriented focus of telecommunications in Canada is fairly reeent, it has been made possible by ongoing and long-term collaboration between business and government to the general exclusion of citizens. This chapter, in part, details the extent of this collaboration in the making of the legislation governing Canada's spectrum.

### 4.1.1 Orientation

It seems practically inevitable to talk about markets in a serious and comprehensive discussion of the radio spectrum, its regulation and its uses. Assuming that markets are the cornerstone for a discussion about wireless communication, though, ignores the processes that have resulted in such an orientation. Ultimately, the award of a license to use the spectrum for whatever purpose is the result of a successful interface with a regulatory process and it is important that these processes be understood and their results quantified. I will take a step back to examine the various processes underlying the spectrum policy system, presenting the state of the Canadian spectrum as the sum of a series of successful interactions with the spectrum policy system. To this end, I have analyzed over 2,400 currently-valid wireless licenses granted by Industry Canada as well as the 1,208 licensed Canadian radio and audio services, and 142 licensed over-the-air television stations.[63] While this method is not a perfect illustration of spectrum allocation in that it does not quantify the "amount" of spectrum reserved for each license holder, I believe it does accurately represent the ultimate success of actors to engage with the policy system. Wireless licenses granted by Industry Canada are largely limited (in this study) to cellular telephony and wireless broadband access, these licenses allocated by either simple application and payment for use or by auction. Radio and audio services licenses include FM, AM and satellite radio and applicants are granted licenses upon successful application to the CRTC to operate as a broadcaster and to Industry Canada as a spectrum user. Television broadcast licenses work similarly.

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63 Industry Canada's SpectrumDirect application permits viewing of all currently valid wireless licenses, not including radio, television or satellite. Data was collected April 2, 2012. Radio and audio services data comes from the CRTC's 2011 Communications Monitoring Report and is thus valid for 2010, the last year for which they present data. This data has been amended to include 7 over-the-air community television stations that, while licensed, were omitted from the CRTC report.

### 4.1.2 Wireless spectrum

"Wireless spectrum" refers to portions of the spectrum used for wireless communication. This includes a large range of possible technologies such as 2-way radios, personal pagers, wireless broadband, and cellular telephony. For the purposes of the current study, I have limited my analysis to currently valid licenses granted for wireless broadband or cellular telephony, data which is publicly available through the Industry Canada website. Spectrum of this sort is granted in two ways, simple application and payment, and auction. To apply for wireless broadband or Personal Communications Service (PCS – an early cellular telephone standard) licenses, anybody from a private individual to large corporation can create an account online, submit the frequency desired, the requisite technical and geographic details and the period of time for which the license is desired. Fees are charged according to a complicated rule-set that takes into consideration the use, frequency and geographic area (Industry Canada, 2003). For spectrum that has been designated for Advanced Wireless Services (AWS, the current standard for cellular telephony), spectrum is auctioned according to rules set by Industry Canada. These processes have resulted in the spectrum licenses that I will detail below. I have filtered out licenses that have been granted to companies for internal communications use as well as licenses held by municipalities for internal use, focusing the analysis on the use of the spectrum to provide a public communications infrastructure.[64] That said, almost all licensees are private corporations.

64 For instance, some large engineering firms and several energy companies have purchased licenses for use in remote locations, presumably to provide their workers with a communications infrastructure where no other is available. At the time of data collection, there were 50 such licenses registered.

### 4.1.3 Attribution of license through simple application and payment

A journey through Industry Canada's database of spectrum licenses provides an initial portrait of spectrum allocation that is revelatory in that it appears to present a case of substantial diversity that discounts popular notions of concentration of telecommunications ownership.[65] For instance, civil society organization OpenMedia recently noted, with a tone of troubled urgency, that Rogers, Bell and Telus together control 94% of the cellular telephone market in Canada (Dampler, 2012). How refreshing, then, to learn that 84 small to medium-sized private corporations have purchased 307 wireless broadband and PCS cellular telephony licenses for an average 3.65 licenses per entity. The vast majority of these companies own between 1-3 licenses and serve a limited geographic range in rural Canada not necessarily served by incumbents. One quickly expanding company offering rural wireless broadband, Xplorenet, owns 48 licenses of this sort. Bell and Rogers are the only incumbent companies active in this licensing space, Bell with 73 licenses and Rogers holding 14. That said, Inukshuk Wireless, a company co-owned by Bell and Rogers, owns 85 broadband wireless licenses across Canada, meaning incumbents, in fact, own an average of 87.5 wireless licenses of this sort. Wireless broadband licenses are granted for annual terms that may be renewed while PCS licenses are awarded for 10-year periods that may also be renewed. While there is no stipulation that the spectrum granted through wireless broadband licenses must be put into use within a certain time period, PCS license holders must demonstrate that at least some portion of the spectrum granted has been put into use within five years. There is, however, no vigorous monitoring system in place (Industry Canada, 2010b). This has opened the door to what is known as "spectrum hoarding" which can be seen by the fact that one entity, Mobile Exchange, owns 144 wireless broadband licenses but is not directly

65 SpectrumDirect. http://sd.ic.gc.ca/pls/engdoc_anon/speclic_browser$.startup

engaged in any sort of communications business. Instead, it has purchased spectrum in most Canadian metropolitan cities and sublets this space to others.[66] In addition, Inukshuk Wireless may also possibly be categorized a "spectrum hoarder." Its website has been out of service for some time and its services appear to be discontinued, yet it continues to exist as a corporate entity and license holder of large amounts of wireless broadband spectrum across Canada (Dampler, 2011).[67] All of these licenses are granted on a "first come, first served" basis. This is the arena of the fastest gun.

### 4.1.4 Auctioned spectrum

While spectrum license sales of the type described above come across as simple and relatively accessible administrative transactions, spectrum auctions generate billions of dollars in government revenue and have become increasingly mediatized events in recent years. The most recent case is related to the analogue switch-over discussed in Chapter Two whereby television broadcasters have been forced to migrate to digital broadcasting in order to liberate spectrum that will be used for telecommunications following its subsequent auction. Although often characterized as an event whereby a handful of incumbent corporations purchase large chunks of spectrum that permit them to expand their market reach, the fine details of auction results show a more complex picture. As in the case above, though, the superficial diversity of the composition of license holders is deceiving. Currently, 386 licenses have been awarded to a total of 77 small to medium-sized companies, again largely serving rural Canada, an average of 5 licenses per entity. Two companies specializing in rural broadband stand out in terms of the number of licenses they hold: Xplorenet with 75

66 http://www.mobilexchange.ca/

67 I have checked the Inukshuk Wireless website regularly over the past two years. The last time it was responsive was in early 2011.

throughout the country and Yourlink with 97 licenses in Saskatchewan. While Quebecor is a Quebec-focused enterprise, they hold 76 licenses across the country. Other companies who have entered the cellular telephony market since 2008 – Mobilicity, Globalive, and Public Mobile – hold 45 licenses between the three of them. Incumbents, though, have the vast majority of auctioned licenses. Bell holds 79, Rogers holds 104 licenses and Telus holds 374. Two examples of spectrum hoarding can be found among this set of licenses. One entity, NextWave Wireless, based in the United States, holds 87 licenses and claims to "own an extensive portfolio of licensed spectrum in the U.S. and Canada" yet is not engaged in the business of communication.[68] The second example of spectrum hoarding is (again) Inukshuk Wireless which holds 340 auctioned licenses. All auctioned licenses are granted on the condition that the license holder use the spectrum for its designated use within 10 years, however there is no monitoring system in place and the time limit will likely be extended to 15 years in the future in response to industry demand (Industry Canada, 2010b). This minimal policy framework, combined with an administrative process that limits itself to purely technical details and basic economic logic, fosters a system that is easy to manipulate if one has the resources to be the first arrived and first served.

### 4.1.5 Owning the spectrum

What does one need to gain a piece of the proverbial spectrum pie? The regulatory system demands, above all, financial, technical and legal resources – prerequisites that logically favour an approach to communications and regulation identical to that advocated by Herzel and Coase decades ago. For the purposes of the current discussion I am not interested in how much spectrum one entity or another has been

68 NextWave Wireless: http://www.nextwave.com/index.aspx

attributed, but instead in the level to which certain entities dominate the system of attribution.[69] While there is a certain degree of wireless spectrum license ownership diversity, it is overshadowed by three important factors that limit this diversity of ownership from having any transformational effect on the fundamental understanding of how, and by whom, the spectrum is used for communication. The first is that most spectrum licenses belong to large corporate enterprises. Communicative uses of the spectrum in the domain of telecommunications are structured around the industrial provision of the means to communicate. It is not the act of communication that is important but the ability to sell, on an industrial scale, the ability to communicate. In turn, according to the CRTC:

> (t)he Canadian telecommunications industry is dominated by 10 large companies that collectively, with their affiliates, account for 95% of Canadian telecommunications revenues. The vast majority of remaining entities are small entities with revenues of less than $5 million. (...) In 2010, companies operating in all six markets of the telecommunications service industry (i.e. local and access, long distance, Internet, data, private line and wireless) accounted for approximately 91% of Canadian telecommunications revenues. Companies operating in only one market sector accounted for 1% of revenues. (CRTC, 2011b, p. 111)

Secondly, while many small companies that make up this 1% of telecommunications services revenues are engaged in providing wireless broadband and cellular coverage to their communities, very few of these are community or cooperatively owned. While I do not mean to say that "all corporations are bad," I believe the regulator introduces severe limitations when the CRTC's very vocabulary is limited to ideas of "industry" and "revenue" in addressing the domain of telecommunications.

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69 While this information would be helpful and interesting, it would also demand a level of research and analysis that is unfortunately beyond the resources of the current project.

Finally, the phenomena of spectrum hoarding introduces an approach to spectrum use that can be seen as either a method for strictly monetary speculation or as a method for impeding competition. Spectrum speculation occurs when an entity or individual purchases a spectrum license without intending to use it for the purpose of wireless communication. Instead, the spectrum is seen as an investment and can, according to Industry Canada policy, be re-sold either in its entirety or in parcels. A similar act takes place when spectrum is hoarded for the purpose of impeding competition. This can be seen in a recent case where Xplorenet, a large rural wireless internet provider of national scope, was outbid by Inukshuk Wireless for spectrum needed to provide wireless internet service in the Durham Region of Ontario. While the municipality's population is widespread and includes both rural and urban areas, Inukshuk plans to provide service only in urban areas, but has exclusive license for both (Follert, 2012; Region of Durham, 2011). Spectrum hoarding and speculation have also been demonstrated to be an issue of concern by SaskTel who, in their submission to Industry Canada regarding changes to spectrum policy in 2011, asked for stricter regulations that would require license holders to use or lose their designated spectrum within five years in order to impede such practices (SaskTel, 2011).

### 4.1.6 Radio and television broadcasting

While a quantifying spectrum licensing for telecommunications use is a task complicated, above all, by regulators' seeming lack of interest in compiling, analyzing and communicating the related data in helpful ways, the CRTC's annual Communication Monitoring Report presents statistics useful for understanding the extent to which the policy system is dominated by certain parties (CRTC, 2011b, pp. 35–58). Television and radio broadcasters operate with, effectively, two licenses – one granted by Industry Canada to use the spectrum and the other granted by the

CRTC to operate as a broadcaster. In 2010, radio broadcast licenses were distributed in the following manner:

| Type of broadcaster | Number of licenses | % of overall licenses |
|---|---|---|
| All | 1,198 | 100% |
| Private commercial | 733 | 61% |
| Public (CBC/Radio Canada) | 102 | 8.5% |
| Non-commercial, non-public | 280[70] | 24% |
| Other (tourist/traffic, weather) | 73 | 6.5% |

**Table 4.1: Radio broadcast licenses, Canada, 2010**

The primary measures of successful broadcasting used by the CRTC in its annual report on the communication system are 1) hours of listening, and 2) revenue. In its most recent report, the CRTC identified Astral Media as the dominant radio broadcaster in Canada in terms of both of these measures. Bell is ranked second in hours of listening and fourth in terms of revenue (CRTC, 2011b, pp. 35–58). Astral Media currently holds 83 radio broadcast licenses, while Bell Canada currently holds 66 such licenses across the country.[71] Recently, Bell Canada applied for regulatory permission to purchase Astral Media which will make it the largest broadcaster in Canada by a significant margin. A total of ten companies, each owning 20 or more separate radio stations, collectively account for 434 licensed radio broadcasters representing 59% of the private broadcasting system and 36% of the entire radio

70 This number amalgamates community, campus, aboriginal, and religious broadcast licenses.

71 All license data used here has retrieved from the CRTC list of licensed commercial radio stations. https://services.crtc.gc.ca/pub/BroadListRad/Default-Defaut.aspx?Lang=e. Accessed 10 April 2012.

broadcasting system in terms of successful instances of spectrum licensing. However, as already discussed, diversity of ownership can be deceiving at first glance. While there is a large number of independently owned broadcasters in Canada, many of these, like the independent telecommunications companies addressed above, operate in rural locations not otherwise served by media groups. Commercial radio stations also appear to be exclusively organized around the model of corporate ownership, be it by a single individual, a group of individuals or private corporations, or through a publicly traded corporation as in, for instance, the case of Bell Canada.[72]

While Canada has almost 2000 radio stations, it currently has only 130 over-the-air television broadcasters combined between commercial, community, religious, educational and public broadcasters.

| **Type of broadcaster** | **Number of licenses** | **Percentage of overall licenses** |
|---|---|---|
| Private | 85 | 65% |
| Public | 26 | 20% |
| Community | 11 | 8,5% |
| Religious | 8 | 6,5 |

Table **4.2: Television broadcast licenses, Canada, 2010**

Bell Canada, in this case, dominates the whole of the licensing system, holding 27 television broadcast licenses across the country and its impending future purchase of Astral Media will add two more. Bell's monopoly combined with other large incumbents Shaw, Rogers, Quebecor and Corus account for 72% of all commercial television licenses. As with wireless spectrum and radio licenses, the majority of independent television broadcasters operate in rural locations otherwise sparsely

72 CRTC Detailed Index of Multiple Ownership Charts. http://www.crtc.gc.ca/ownership/eng/index.htm.

served by more major media entities. Over-the-air community television seems to be particularly ignored by the CRTC. While 11 stations appear on the regulator's website (seven full-power, four low-power), they are completely omitted from the CRTC annual Communication Monitoring Report.[73]

### 4.1.7 Convergence on the horizon

Convergence is a word that, when used outside the communications domain, sometimes refers to a dramatic event whereby independent entities become one. While it does not exclusively refer to things of great scale, convergence (to me, at least) infers a collision of imposing scale with somewhat unpredictable after-effects. Take the convergence of glaciers, for instance. Two massive entities brought together by time and chance, changing forever the landscape around them, carving new rivers, future channels of communication and travel.

73 In Canada, most community television licenses belong to commercial cable companies which, in turn, are supposed to administer funds and make accessible the infrastructure for community television channels. The history of this has been well documented elsewhere (Hardin, 1985).

**Figure 5: Two glaciers converging on Axel Heiberg Island, Nunavut.**[74]

While we have experienced numerous cycles of technological convergence (as explored in Chapter 1), the Canadian communication system and communication policy system are currently undergoing a change as dramatic as the one pictured above. The impending merger of Bell Canada and Astral will create an entity that dominates the spectrum policy system in every area – wireless communication, radio, and television. As with the eventual effects of these two glaciers slowly becoming one, the changes wrought by this merger on the underlying foundations of policy, politics, and the ability to freely communicate are difficult to predict. Other large corporate actors – "the incumbents" as they are collectively known – are engaged in similar strategies. As this chapter demonstrates, access to the spectrum in Canada is contingent on access to the politics of the spectrum. This access itself depends on

74 Converging Glaciers. Posted by Dawna MacIvor. 8 April 2011. https://blogs.dal.ca/science/2011/04/21/science-as-art-2012-entries/davies-glacier-sm/.

both the capacity of individual actors (corporate and corporal) to engage with the policy system and the capacity of the policy system itself to be accessible to a diversity of actors in meaningful ways. The ability of actors to engage with the policy system, though, is not simply a question of policy and regulation but lies fundamentally in their legal groundwork. The foundational laws that give rise to the entirety of our communication system function as broad-reaching ethical frameworks in that they set a standard for inclusion that is replicated along the policy chain of command. It is to these laws, then, that I now turn.

### 4.2 Legal frameworks

Regulation of the use of the Canadian radio spectrum is fragmented in its structure, with powers defined through numerous laws. While wireless communications technologies are governed by the *Telecommunications Act* of 1993 (Department of Justice, 1993), the *Broadcasting Act* of 1991 (Department of Justice, 1991), and *Radiocommunications Act* of 1989 (Department of Justice, 1989), the spectrum itself is not defined, nor even mentioned, in any of these. To the contrary, definitions of communication acts that take place across the radio spectrum are clearly defined, at least in terms of broadcasting. Hence, the *Broadcasting Act* of 1991 tells us that:

> "Broadcasting" means any transmission of programs, whether or not encrypted, by radio waves or other means of telecommunication for reception by the public by means of broadcasting receiving apparatus, but does not include any such transmission of programs that is made solely for performance or display in a public place. (Department of Justice, 1991, p. 1)

Radio waves are defined as: "electromagnetic waves of frequencies lower than 3 000 GHz that are propagated in space without artificial guide" (Department of Justice, 1991, p. 2). Along with defining radio waves and the act of broadcasting, the 1991

*Broadcasting Act* lays out the general responsibilities of the CRTC as the regulator (of broadcasting) and the responsibilities of the CBC as a public broadcaster. Unlike the broadcasting sector, the legal foundation for regulating telecommunications encompasses the use of electromagnetic energy for communication across any medium. The *Telecommunications Act* of 1993 defines "telecommunications" as:

> the emission, transmission or reception of intelligence by any wire, cable, radio, optical or other electromagnetic system, or by any similar system (Department of Justice, 1993, pp. 2–3)

and thus would seemingly regard radio and television broadcasting as forms of telecommunication and recognize the inevitable nature of "convergence".[75] Further, the *Radiocommunication Act* of 1989 defines "radiocommunication" or "radio" as:

> any transmission, emission or reception of signs, signals, writing, images, sounds or intelligence of any nature by means of electromagnetic waves of frequencies lower than 3 000 GHz propagated in space without artificial guide (Department of Justice, 1989, p. 3)

and defines broadcasting as:

> "any radiocommunication in which the transmissions are intended for direct reception by the general public" (Department of Justice, 1989, p. 1).

While there appears to be a lack of continuity in the exact definitions used, the 1989 *Radiocommunications Act*, preceding the two others, provides a baseline of regulatory control regarding the use of any radio technology within Canadian waters or on Canadian land. Responsibility for carrying out this regulation lies in the hands of the Minister of Industry or individuals delegated by her. In addition, this legislation gives the Minister the power to establish procedures for competitive bidding on the

75 The *Radiocommunications Act*, examined in Parliamentary committee in 1989 and passed into law shortly thereafter, replaced the *Radio Act* of 1938. Whether intentional or not, this recognition of convergence lends a certain timeless quality to the new act such that it would be able to endure, without amendment, the evolution of technology.

spectrum (spectrum auctions) (Department of Justice, 1989, p. 7). A number of special powers are also granted to the Governor in Council.[76] In particular, the Governor in Council may herself introduce any radio regulations she deems appropriate, prescribe the eligibility of individuals to be authorized to use radio technology according to their immigration status, and serve as the negotiating party to international treaties concerning the radio spectrum (Department of Justice, 1989, pp. 8–9). Finally, the Governor in Council may expropriate "any radio station and all things necessary to the sufficient working of it", including its employees for any time period she desires (Department of Justice, 1989, p. 11).

The *Telecommunication Act* of 1993 and *Broadcasting Act* of 1991 and the regulatory bodies defined therein (the *Broadcasting Act* creating and granting powers to the CRTC, the *Telecommunications Act* granting powers to the Minister of Industry and the CRTC) provide a public face and basic regulatory structure for Canada's communication and media system. It is the 1989 *Radiocommunications Act*, however, that provides a definitive legal reference point for control of the spectrum. The power relationship between the Governor in Council and civil society is demonstrated through the near absolute absence of the latter in any of this legislation. Of the three acts defining our communication and media system, citizens make but one brief appearance. And even then, in the *Broadcasting Act* of 1991, only citizens "affected by an order of the commission" are addressed. Should they wish to appeal a decision of the CRTC they may appeal directly the CRTC within 30 days of the original decision (Department of Justice, 1991, p. 14). Participation in decision-making processes is guaranteed to nobody. Additionally, not only are citizens largely excluded from the legislative framework of their national communication and media

76 The Governor in Council is the governor general acting on advice of the federal cabinet.

system, but so too are their political representatives. While Parliament may have crafted and enacted these laws, the parliamentary body is given no explicit powers of direction or oversight. Power instead is exclusively concentrated in the office of the Prime Minister and the Minister of Industry. Therefore, much policy regarding the spectrum is not, *de jure*, required to be developed in public view, let alone with public participation. Raboy has noted that, in the development of broadcasting policy, there are two points of access: one through a formal system of consultation and transparent decision-making, the other by appealing directly to institutional decision-makers themselves – an act otherwise known as lobbying (1995a, p. 17). In this case, we find a complete absence of the former and a policy-making system that is opaque. Further, the 1989 *Radiocommunication Act*, a grossly under-analyzed piece of legislation, gives the Minister of Industry the power to negotiate and enter into international treaties regarding the radio spectrum without providing any mechanism of public consultation. Surprisingly, no reference to the Act, which defines the foundational power relationships of radio spectrum use and regulation, can be found anywhere in the literature on the policy and politics of Canada's broadcasting and telecommunications systems (Babe, 1990; Peers, 1969; Raboy, 1990b; Raboy & Shtern, 2010; Salter, 2008; Sénécal, 1995; Wilson, 2000).

### 4.2.1 Law-making and participation

In 2010-2011, the Standing Committee on Industry, Science and Technology, composed of 12 elected MPs, was a fairly regular fixture in Canada's news media. The CRTC had made a controversial ruling concerning the manner in which the country's dominant telecommunications providers could bill smaller internet service providers (ISPs) for wholesale purchase and use of their infrastructure. At the behest of a recently formed civil society organization, OpenMedia, 502,703 Canadians then

signed an online petition addressed to the CRTC, Prime Minister Stephen Harper and the Minister of Industry demanding that the CRTC's decision be reversed.[77] With national news websites providing play-by-play coverage of the video-streamed hearings, this important law-making venue became a publicized media event (The Globe and Mail, 2011).

Standing committees play a key role in developing legislation of all sorts that passes through Parliament and are thus the epicentre of documented debate around the crafting of legislation. Examining the functionality of the communication policy system by beginning at this legislative origin contributes to a comprehensive understanding of the system and, ultimately, the extent to which it enables or obstructs citizen participation. This is important because the legislative foundation of our national communication policy system offers more than simple legal grounding; it provides an ethical reference point to which all administrative policy can refer. These foundational laws are, in their essence and in the manner in which they have been developed, examples of inclusion and participation that serve as a standard for policy-makers further down the chain of command. In this way, they affect not only "who is at the table" but who "who" is to begin with. This case study will demonstrate that in the Canadian spectrum policy system, standards for participation and public inclusion are either minimal or absent throughout every step of the spectrum policy-making process.

As with all other federal policy in Canada, spectrum policy is built upon a legislative foundation. Leading up to the initial development of each law, one or more studies or consultations may be undertaken and numerous such processes have been conducted

77 OpenMedia: http://openmedia.ca/meter

since the early 1900s. According to Barney, this long history of institutionalized venues for public participation in deliberations regarding communication policy has advanced to the degree where "democratic participation in communication processes has become the norm in Canada, even in the absence of formal requirements for consultation" (Darin David Barney, 2005, p. 34). One such venue often appearing in contemporary treatments of Canadian broadcasting policy is the Task Force on Canadian Broadcasting Policy. Headed by Gerard Caplan and Florian Sauvageau, it met in private with 165 organizations and heard from 264 public intervenors between 1985-1990 in order to provide the government with well-researched recommendations for future policy (Raboy, 1995a, p. 30). However, while these studies and consultations may hear from hundreds of individuals and interest groups and take years to complete, final recommendations are not necessarily mirrored in the final version of the relevant act, and the individuals undertaking these consultations have no decision-making power themselves (Raboy, 1995a). Nor is there any standard policy stating that such studies or consultations must occur at all. Nor is there a policy that assures investigatory practices are informed by or conducted according to a set of ethical guidelines that define, for instance, a required level of public participation. There is thus a distinct lack of clarity in understanding where and how one can intervene in law-making and the extent to which one's intervention will be taken into account. To put it bluntly, it is difficult to ascertain where real power lies. Illustrating this phenomena, the following analysis evaluates participation in Parliamentary law-making processes – the 1989 *Radiocommunictions Act*, the 1993 *Telecommunications Act*, and the 1991 *Broadcasting Act* - and two studies that were undertaken regarding the second two Acts. It will show that citizens and civil society organizations participate to a far greater extent in studies or consultations that may (or may not) inform the law-making process than in law-making processes themselves. When

citizens and civil society organizations did gain access to these law-making processes, their participation was often discounted and they were generally treated less respectfully than private sector and governmental actors.

Every Canadian federal law is enacted in a similar fashion. Once an initial draft of the bill is introduced in Parliament and passed through general debate (upon its second reading), it is sent to the relevant Standing Committee (Milne, 2009, pp. 55–56) or to an ad-hoc legislative committee who then undertake their own examination, which may involve holding hearings and calling witnesses to provide input. Given the Standing Committee's clear Parliamentary mandate (Procedural Services of the House of Commons, 2008, p. 1) and ability to call witnesses to inform them, this would appear, on the surface, to be a potentially important point by which citizens can access the policy-making system at the point of legislative origin.

According to the House of Commons witness guide, "committees regularly invite private individuals, experts, representatives of groups and organizations, lobbyists, public servants and Ministers of the Crown to appear before them in order to elicit information". Witnesses are chosen based on two sole criteria: "the type of study and the amount of time available" (Procedural Services of the House of Commons, 2008, p. 2), although no mechanism is defined for the recruitment of witnesses. With no definitive process, how does one become a witness or express the desire to testify? How do committees assure that the composition of their witness list is representative of the various stakeholders concerned? To answer these questions I decided to speak with experienced legislators, namely Marc Garneau (Liberal MP, former astronaut, Liberal party critic for industry, science and technology) and Dennis Dawson (Liberal

senator and chair of the Standing Committee on Transportation and Communication).[78] It appears that the exact mechanics of witness selection are difficult for even them to discern. According to Garneau and Dawson, witnesses can be chosen through a variety of methods, although each was somewhat uncertain in their response. According to Senator Dawson, "Basically, it's..through, uhhh... the uh... the library of Parliament, we look at who has intervened in the past. We will announce that we're doing this study and basically people that are involved will react and say "we want to be heard"", while individuals and groups may also directly appeal to members of the committee (aka. lobbying) (Dawson, 2010). Each member of the committee submits to the committee clerk a list of individuals they would like to appear. Ultimately, a decision is rendered according to undetermined means by the chair and clerk (Garneau, 2010). Commenting further, Garneau stated that:

> I can't tell you how it's decided in terms of proportion. I think it's based on, typically, in proportion to you know, who gets the biggest say on the number of witnesses. It ideally should be non-partisan, we should have an equal number – no not an equal number – we should have a reasonable number on each side of the argument. How one chooses the exact numbering, I don't know. I don't know. I've submitted my witness lists. I have to say I found it fair that I've had not every witness I've put in appear, but a reasonable number. But I've also heard people say, "Hey, you didn't give our side of the equation enough time." (Garneau, 2010)

Extensive analysis of Parliamentary committee procedures and the experiences of law-makers has shown that no clear guidelines exist for facilitating public participation (McInnes, 2005, pp. 33–71). Ground rules for participation are unclear

78 Interviews were requested with representatives of all political parties. An interview with Bloc Québecois MP Serge Cardin did not touch on parliamentary procedure (Cardin, 2010); the New Democratic Party suffered a communication breakdown; and the Conservative Party refused an interview request with the Chair of the Standing Committee on Industry, Science and Technology.

and the choice of participants is made on a partisan basis and often dominated by the committee chair. Lobbying plays a key role in becoming a standing committee witness and one must have already gained privileged access to either the politicians involved or be recognized as somebody whose opinion should be considered and thus already "on the radar" of the committee or the parliamentary library (McInnes, 2005, pp. 38–71). Such a process, Dennis Dawson alluded, leans strongly toward industry (as opposed to public) involvement: "It's very open. If you don't know that there's a study going on, you've really got a big problem in your industry" (Dawson, 2010).[79]

One individual, highly experienced in broadcast policy and in interpreting the political environment (and then taking action within it), explained that more substantial influence on the law-making process is made outside the standing committee processes through the informality of closed-door meetings between MPs and interest groups. For Ian Morrison, spokesperson of Friends of Canadian Broadcasting and an active analyst of Canadian communication policy since the 1970s, the standing committee functions as "a theatrical stage where interests lay out their ideas. (...) They create an environment where competing interests can interact, so that they help observers to map interests that need to be accommodated in the design of public policy" (Morrison, 2010). Indeed, venues such as this are a visible part of a largely private process that combines undocumented (or at least unpublicized or unpublished) decision-making processes and sparingly documented instances of lobbying. The referral of a law to a standing committee, however, is the best possible

79 During the 25 years preceding his appointment to the Senate in 2005, Senator Dennis Dawson was a telecommunications lobbyist (Dawson, 2010). While he was unwilling to discuss his lobbying history, a search of the Registry of Lobbyists shows Bell Canada, Canwest Global Communications, Air Canada and Westjet to be among his most active clients since the registry was initiated in 1996. As the Chair of the Standing Committee on Transport and Communication, Dawson plays a key role in the crafting of any federal legislation affecting these companies.

scenario for individuals and organizations who invest time and energy in establishing relationships with their members. Other possible routes for a proposed law may include the formation of an ad-hoc committee called a "legislative committee" which then carries out the same work as a standing committee (Parliament of Canada, 2010a), or a second reading of a bill without any official forum for investigation and debate. This means that it is possible, in the Canadian legislative system, to adopt a law of any sort without providing the public with a means of participating (individually or through elected representatives) in its debate, regardless of how it may affect their lives. The 1991 *Broadcasting Act* and 1989 *Radiocommunications Act* discussed above were both examined by legislative committees while the 1993 *Telecommunication Act* was referred to the Standing Committee on Communication and Culture.

### 4.2.2 Parliamentary committee participation

One of the expectations of living in a democracy is that it is possible to make one's voice heard concerning matters that affect you. At the very least, this is what I expect of the democracy that I live in. I would therefore expect that the legislative processes that underlie our communication and media system would provide a mechanism for receiving just this type of input, something that might be found in a standing committee, for example. To the contrary, official Parliamentary Procedure designates no standard process for deciding whose voices should be heard during deliberations over the content of laws (Parliament of Canada, 2010a), leaving the decision ultimately in the hands of the Chair (who is an MP of the ruling party). To illustrate quite plainly the results of this process, the following is an analysis of participation in the legislative committee and standing committee hearings which led to the approval of the 1991 *Broadcasting Act* and 1993 *Telecommunications Act*. In the case of the

*Radiocommunications Act* of 1989, no witnesses appeared at the committee whatsoever. In this case, however, evidence provided by committee members attests to an informal consultation process that took place, which parties were consulted and explains how this consultation affected the crafting of the law.

### 4.2.3 *The Radiocommunication Act* of 1989

Legislative committee hearings concerning the *Radiocommunication Act* of 1989, then known as Bill C-6, took place over the course of one single meeting, on June 6, 1989, of an ad-hoc legislative committee struck for this express purpose. The committee called no witnesses. However, MP Jim Edwards, charged with coordinating the development of the bill as Parliamentary Secretary to the Minister of Communications, provides important details of an informal consultation process that, based on comments made during this meeting, took place with the knowledge and approval of the committee.[80] The following exchange plainly illustrates the scope of consultation.

> Mrs Finestone: (...) You said in your speech that since the Spectrum 20/20 symposium had been had been (*sic.*) in 1987, a great deal of effort had been spent consulting with industry members. You worked with them to develop and draft appropriate amendments to reflect the reality and needs of the *(sic.)* Spectrum management into the 21st century. I wonder if you could share with us who you consulted with. Was anyone left out? To your knowledge, has there been any kind of concern expressed about this bill?
>
> Mr. Edwards: To my knowledge, there has been no concern expressed about the bill. I do not have the exhaustive list of those with whom consultations were held, Mrs. Finestone, but I am aware that all

80 A current member of the Selection Board of the Canada Excellence Research Chairs and vice-president and governing chair of the Natural Sciences and Engineering Research Council (NSERC) Governing Council (http://www.cerc.gc.ca/selection/edwards-eng.shtml), James S. Edwards spent 29 years working in the broadcasting sector, including establishing Edmonton's first FM radio station in 1964, before becoming a politician.

> representative industry associations and manufacturers (...) were consulted. As well, consultations were held with the Canadian Standards Association.
> (House of Commons, 1989a, p. 10)
>
> Mr. Edwards: There are many ways of having these discussions. I understand from officials of the department, Mr. Harvard, that there is a constant dialogue with all radio users, but that specifically there was a focus brought to bear through annual meetings of associations, through visits to departmental officials, up to the deputy minister level. Among those who were consulted, and there is some correspondence that has been received, have been the Radio Advisory Board, the Canadian Association of Broadcasters, large commercial users of radio in the industrial and commercial field, other government departments, such as the Department of National Defence, as well as the provincial government.[81]
>
> Mr. Harvard: In other words, support is rock solid?
>
> Mr. Edwards: Yes, and there appears to be no dissent anywhere, and that is remarkable, in my limited experience.
> (House of Commons, 1989a, p. 12)

Based on this testimony, it can be observed that the *Radiocommunication Act* of 1989 was designed in exclusive consultation between the Department of Communication (whose powers, as a subordinate of the Minister of Industry, are in part defined in this very piece of legislation) and commercial users of the radio spectrum. This was not a simple consultation, however, but rather *cooperation* between interested actors (both the regulator and the regulated parties) on the design of a law that not only defines their relationships with one another but ultimately the extent to which these relationships will shape the future of spectrum use in Canada. With a consultation of such design, where the public and other non-commercial users of the spectrum were

81 The Radio Advisory Board of Canada has been a coordinating point for primarily commercial spectrum users, plus radio amateurs and public safety organizations since the 1940s. Contacted multiple times during the course of this research, they never replied to phone calls nor emails.

not even marginally considered, dissent of any sort would have been surprising indeed. That said, this provides us with a good starting point for understanding the close relationship between private industry and the technical regulation of the spectrum and which serves to inform the consistent exclusion of non-commercial interests.

The late 1980s and early 1990s were busy times for law-makers engaged in the work of "modernizing" Canada's legislative system to accommodate new communication technologies and the business models that accompanied them. This is not to say that non-commercial uses of the same technology had not been developed along the way. Community television (Hardin, 1985) and community radio (Girard, 1992; Light, 2012a, 2012b) movements had developed throughout the country and gained notable financial support from the Quebec government. Civil society organizations representing these movements were also highly active with the founding of the Association des radiodiffuseurs communautaires du Québec (ARCQ) in 1979, and l'Association mondiale des radiodiffuseurs communautaires (AMARC) in Montreal in 1983 (AMARC, 2012; ARCQ, 2011). Nevertheless, when it came to the task of revisiting the *Radiocommunication Act* in 1989, neither of these groups nor their member stations were invited to testify to the Legislative Committee undertaking its revision (House of Commons, 1989b).

### 4.2.4 The *Broadcasting Act* of 1991

Known as Bill C-40, the revised *Broadcasting Act* of 1991 was, like the 1989 *Radiocommunication Act* that shortly preceded it, studied by a Legislative Committee. Among it's central members were the most vocal members of this previous committee and MP Jim Edwards again undertook the work of escorting the act through the

process. This time around, a number of witnesses were called. The following table presents an analysis of participation according to witness type, numbers of times a member of each witness grouping appeared before the committee (there were no repetitions), and the amount of time allowed in total. The committee, by rule, granted most witnesses 45 minutes during which to make a formal presentation followed by a period of discussion with and/or interrogation by the committee. Laws of this magnitude are typically introduced by the government in power and must pass through committee review where they may be amended to an uncertain degree. The first witness called before the Legislative Committee was the Minister of Communications, the individual ultimately responsible for the drafting of the law and its enforcement. Given the one and a half hours of dedicated committee time, the Minister was able to set the tone of the hearings and answer any questions MPs had in advance of any other intervenors.

| **Witnesses type** | **Number of appearances** | **Time allowed** |
|---|---|---|
| Private sector | 11 times | 8.75 hours |
| Unions | 6 times | 4.5 hours |
| Department of Communication | 1 time | 1.5 hours |
| Public media | 2 times | 2.25 hours |
| CRTC | 1 time | 1.75 hours |
| Civil society | 5 times | 3.75 hours |
| Other (Nova Scotia Ministry of Transportation and Communication) | 1 time | .75 hours |

**Table 4.4: *Broadcasting Act* of 1991, Legislative Committee Participation**

While it would appear that the amount of "face time" granted to non-governmental

bodies is almost equal among all actors, it is ultimately the quality of this time that counts. Analyzing the committee minutes (House of Commons, 1989b), I have found there to be an apparent and systematic difference in the treatment of different actors. At the beginning of each session, a member of the committee, usually the Chair, informed the witnesses that they had 45 minutes to use as they saw fit and throughout the committee hearings, the witness was reminded of their allotted time. Nonetheless, two of the 11 private sector actors, the Canadian Association of Broadcasters (CAB) and Western International Communications Ltd, were permitted to give one hour of testimony each. All but two private sector interventions were followed by collaborative discussion between the committee members and intervenors. There was an obvious familiarity between the private sector intervenors and members of the committee; one has the impression that they appreciated one another as peers. In the two private sector interventions that were not met by friendly discourse, intervenors gave confusing presentations and appear to have been humoured for the duration of time promised them. Unions represented the second highest number of participants and brought together a variety of interests: actors, technicians, producers and directors. Committee reaction was largely neutral in response to all union interventions with the exception of the Alliance of Canadian Cinema, Television and Radio Actors (ACTRA). By sending familiar Canadian actors to the committee, rather than union bureaucrats, ACTRA attracted more attention and elicited more discussion from the committee with a presentation containing less content (proposed amendments, etc) than other unions. Four of the five civil society organizations intervening asked pointed questions of the committee regarding the proposed 1991 *Broadcasting Act* and how it would address, for instance, the representation of minorities both in the media and in the composition of regulatory bodies. These groups, some of whom also proposed amendments to the content of the Act, were

either met with disinterest or hostile lines of questioning on the part of the committee. Raboy has documented the extent to which representatives of certain industry associations were regularly consulted regarding how legislation would affect their membership, with the Canadian Cable Television Association representative stating plainly that "the CCTA was consulted in detail at every stage of the legislation" (Raboy, 1995b, p. 417).

Legislative Committees, as opposed to Standing Committees, are ad-hoc committees of the House of Commons given the task of studying legislation according to a strict timetable – it's work must be reported to the House by "the following Thursday" (Parliament of Canada, 2010b).[82] Given the limited mandated time allotted "they tend to limit witnesses to officials from government departments, agencies and crown corporations, and to other persons that the committee deems competent to appear on technical matters" (Parliament of Canada, 2010b). Why then, would the 1989 *Radiocommunication Act* and 1991 *Broadcasting Act* – two of the three legal pillars of Canada's communication and media system – be treated to such limited examination? Raboy has noted that some parts of the 1991 *Broadcasting Act* were "the result of a unique process of public consultation and lobbying that mobilized dozens of civil society groups and several thousand individuals over a six-year period (1985-1991)" (Raboy, 2011, p. 104). Raboy's account in itself, though, does not indicate a transparent, democratic or accessible process; nor does it mean that the ability of these civil society groups and individuals to influence the law-making process was greater than or equal to that of vested interests long since engrained in the informalities of the system. While the Caplan-Sauvageau report -- the public consultation to which Raboy refers -- is at times mentioned during the committee

82 This rule may have changed since 1989 as the Legislative Committee in question met between December 20, 1989 and March 16, 1990 for a total of 14 sessions.

hearings, there was no explicit mechanism for including this report and its evidence in the law-making process, the final product of which was ultimately produced by the Legislative Committee.

### 4.2.5 The *Telecommunications Act* of 1993

Unlike the previous two Acts, the *Telecommunications Act* of 1993 was studied by a sub-committee of the Standing Committee on Communications and Culture. Hearings were undertaken over 12 days between April 21 and May 27, 1993. During this period, testimony was heard from a number of intervenors and the majority of attention was given to the private sector.

| Witnesses type | Number of appearances | Time allowed |
|---|---|---|
| CRTC & Department of Communications | 9 times | 11.75 hours |
| Private sector | 13 times | 12.25 hours |
| Unions | 2 times | 1.4 hours |
| Consumer advocacy groups | 2 times | 55 minutes |
| Ministry of Transportation & Communication (Nova Scotia) | 1 time | 45 minutes |
| Civil society | 2 times | 1.5 hours |

**Table 4.5: *Telecommunications Act* of 1993, Standing Committee Participation**

As in the case of the 1991 *Broadcasting Act*, the Minister of Communications was the first to provide testimony, speaking for a total of 90 minutes. During this time, he presented the government's rationale for the content of the Act and went to great length to reassure committee members that all of their constituents had been considered. While the committee process around the 1991 *Broadcasting Act* generally

allotted intervenors equal time, in the current case time allocation and attention given to intervenors was grossly unbalanced. Early committee sessions consisted of lengthy private sector interventions during which telecommunications corporations and their representative associations proposed numerous amendments to the Act and explained how such changes would affect their businesses. Discussion was collaborative and, in some cases, private sector actors mention that they had previously met with government policymakers to discuss the content of the Act, a luxury seemingly not afforded to non-corporate intervenors. Three such intervening groups – the Telecommunications Workers' Union (TWU), the Public Interest Advocacy Centre (PIAC) and the Fédération nationale des associations de consumateurs du Québec – were critical of the Act, focusing notably on the issues of universal access and the effects of market liberalization on working conditions. PIAC, in particular, offered extensive amendments to the content of the Act. In response, all groups were met by aggressive questioning on the part of committee members and intervention time was cut short, sometimes severely. Rather than the usual 45 minutes of allocated time, PIAC's testimony was cut short after 30 minutes and the Fédération after 25 minutes. The testimony of the Canadian Bar Association was particularly telling. It representatives qualify the incomplete nature of their statements by explaining the difficulties faced by a civil society organization trying to respond to bureaucratic time-lines based on the capacity of government and the private sector.

As shown earlier, the 1989 *Radiocommunication Act* was, in part, the product of collaboration between law-makers and private industry. In that case, the collaboration occurred outside public view. According to the minutes of the Standing Committee, it appears that a similar sort of collaboration occurred in the case of the 1993 *Telecommunications Act*, this time within the framework of the committee itself. To

this end, the committee received extensive input from the private sector at the beginning of its examination of the Act, including several propositions to change content. It then spent a number of hours in discussion with CRTC staff, going over the fine details of the Act and asking questions of them based on previous interventions. This, mid-story, seems innocuous enough. In the final sessions of this Standing Committee Sub-committee, however, the pieces come together. Over the course of the final two sessions, the Department of Communications, CRTC, and numerous private telecommunications actors met together and negotiated amendments to the proposed 1993 *Telecommunications Act*. The final content of the Act was then entered in the official record as the committee's final act. Everybody at these meetings was, again, on-board. There was no dissent.

Telecommunications, like broadcasting, is at once technical, economic, cultural and political. It is a thing that touches vast sectors of public and private life. However, while the Caplan-Sauvageau task force on broadcasting provided a space for the enormous quantity and variety of actors to express themselves regarding the content of proposed legislation, no such process was undertaken for the 1993 *Telecommunications Act*. Thus, there are a number of glaring omissions in the primary data used by law-makers in their crafting of the Act. One important omission, which may have contributed to a truly transformative 1993 *Telecommunications Act*, is the model of non-profit provision of telecommunications infrastructure. This is not because groups working to such an end did not exist. Non-profit telecommunications efforts in Canada had been established by the time of these hearings. Community-managed networks began to come online with National Capital Freenet in Ottawa founded in 1992 and the Peace Region Internet Society in the Interior of British Columbia founded in 1993 (National Capital Freenet, 2012; Peace

Region Internet Society, 2010). Unless future models for Parliamentary consultation expand the range of their consultations, future communications laws will be bound to be created in a similar fashion.

In the case of the *Radiocommunication Act* of 1989, very few names of the consultative parties were divulged. In contrast, there is documented testimony from each witness concerning the 1993 *Telecommunications Act* and 1991 *Broadcasting Act*. If one adopts Ian Morrison's stance that these hearings serve primarily as works of political theatre, what then can be said of the cast and the resulting work of legislative art? Examining the testimony of the Legislative Committee organized around the 1989 *Radiocommunications Act*, one could estimate that roughly the same set of actors participated in the crafting of the 1993 *Telecommunications Act.* One can also see that the makeup of witnesses informing the process around the 1991 *Broadcasting Act* is similar to each of these. Regulators, individual telecommunications or broadcasting corporations, and associations of these corporations largely dominate the proceedings.[83] While the inclusion of consumer advocacy groups in the second two proceedings could be seen as a broadening in public participation, this phenomena is perhaps also indicative of the long march from the "Right to Communicate" to "Consumer Right of Access", considerably lowering the standards of debate from one about actual rights to a debate over the consumer's ultimate ability to consume (to the profit of others) (Moll, Shade, & Longford, 2008, pp. 3–4). A market-oriented bias can be seen through the composition of participants in these hearings as well as in its end result. In particular, Pippa Lawson notes (concerning the 1993 *Telecommunications Act)* that:

83 Broadcasting and telecommunications in Canada are regulated by a host of regulators such as the Competition Bureau, Industry Canada, the Copyright Board and the CRTC. However, Industry Canada and the CRTC tend to dominate most Parliamentary hearings concerning this legislation.

> The Act retained previous rules requiring "just and reasonable rates" and prohibiting "unjust discrimination" (s.27), but added a significant new "forbearance" requirement, not just *permitting* the CRTC to deregulate, but *requiring* deregulation where the Commission finds as a question of fact that a telecommunications service or class of service provided by a Canadian carrier is or will be subject to competition sufficient to protect the interest of users. (Lawson, 2008, p. 17)

Communications legislation, whether it be concerned with the spectrum, telecommunications or broadcasting, creates a broad and suggestive framework upon which are built the plethora of policies that make our communication and media system work. Policies are the proverbial gears of the machine. The 1993 revision of the *Telecommunications Act* effectively altered the framework in which these policies operate, imposing a deregulatory imperative and orienting the policy system and the telecommunications system heavily in favour of market-based approaches to communication (Lawson, 2008).

### 4.3 Telecommunication Policy Review Panel

Further demonstrating the ability of the federal government to both shape the policy system and future legislation, in 2005 the Minister of Industry struck the Telecommunications Policy Review Panel (TPRP) to conduct a study on the state of Canada's telecommunications policy framework and to make recommendations on its future (Telecommunications Policy Review Panel, 2006, p. iii) in light of increasing technological convergence.

The panel's three members came directly from the Canadian communications industry. Chair Gerri Sinclair had been General Manager of MSN Canada, Hank Intven is a longtime telecommunications industry lawyer, and André Tremblay is CEO of satellite company Terrestar. Somewhat similar to the Task Force that

preceded (and ostensibly informed to some degree) the 1991 re-writing of the *Broadcasting Act* previously, the TPRP was to perform a consultation that would then inform recommendations on future policy and legislative design. The report was issued in 2007 and "recommends amending the *Telecommunications Act* so as to replace its current "soft" deregulatory bias with a very "hard" bias against regulation" (Lawson, 2008). On December 14, 2006, the Governor in Council issued a first-ever policy directive to the CRTC demanding that they "follow the market" when making telecommunications-related decisions and basing this directive on the results of the TPRP (Government of Canada, 2006). Six months later, committee member Hank Intven and Mary Dawson – both lawyers at law firm McCartney Tétrault, published a model act for incorporating the reforms made by this committee. Funded by Telus and Bell (Lawson, 2008), this has been described as a form of "policy laundering" whereby industry literally writes model legislation that can then be used as a template or content for actual legislation (Shade, 2009). Given the demonstrated cooperative relationship between law-makers and the Canadian communications industries, however, I would say this was simply an evolutionary step in the packaging of legislative proposals. More so, touted by the authors as the product of the public process of the Telecommunications Policy Review, such proposals could be seen to have more legitimacy than the informal and undocumented consultative practices of a decade earlier even though the content and the means by which it has been produced may not be substantively different. For sale online by Intven and Dawson's law firm McCarthy Tétrault,

> "(t)he Model Act is intended to provide the Government, Parliamentarians, officials and other stakeholders in telecommunications policy with practical suggestions on how the various recommendations of the TPR Report could be transformed into legislation" (McCarthy Tétrault, 2007).

If we grant a sense of legitimacy to the TPRP based on it being the final product of a public process, it is then important that this process itself be investigated. In particular, who participated in the review, how, and to what end? On June 6, 2005, the TPRP issued a consultation paper available only on their website. Notice was issued in the Canada Gazette a week later (Canada Gazette, 2005).[84] The general public were given until August 15, 2005 to respond to the consultation paper and until September 15, 2005 to reply to these initial comments. The following graph shows a breakdown of participation, amalgamating both comment periods. While civil society groups participated more actively than in the other forums noted here, participation in those other forums was by invitation. In addition, "a content analysis revealed that Aboriginal, consumer, women's and community groups represented only 15.5% of the total submissions, versus 60.1% for industry groups" (Moll et al., 2008, p. 6).

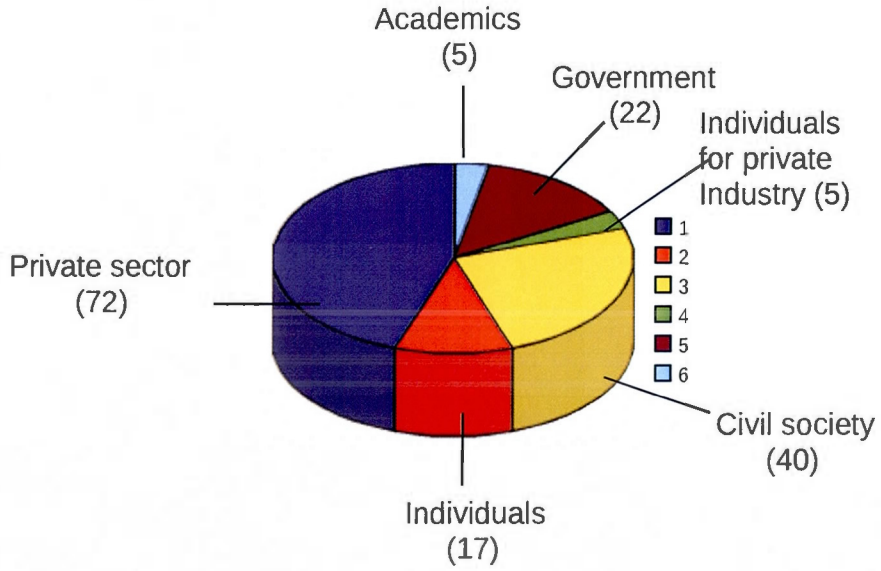


**Figure 8: Telecommunications Policy Review Panel Participation, 2006**

84 The Canada Gazette is the official newspaper of the Government of Canada. Online: http://gazette.gc.ca.

While it is possible to be critical of the TPRP process and its aftermath, I believe these problems are directly related to a tradition in communications policy-making that is quite old and engrained into the world-view and practice of this craft. With historical law-making practices that revolve around informal consultation practices and result in legislation that does not define working standards for concepts such as participation, representation and inclusion by which policy should function, it would be surprising if the TPRP had turned out otherwise, as with every other spectrum policy venue analyzed here.

### 4.4 The Canadian Radio-Television and Telecommunications Commission

The Canadian Radio-television and Telecommunications Commission or CRTC regulates Canada's broadcasting and telecommunications systems and reports to Parliament through the Minister of Canadian Heritage (CRTC, 2009), although this arrangement is fluid as earlier noted. The CRTC is the only piece of the communications regulatory system that engages in regular public consultations. Broadcasters must first receive technical approval from Industry Canada and can then apply to the CRTC for a license to operate. All of these broadcast license applications or renewals are vetted in public hearings and notice is given online and in the *Canada Gazette*.

According to the 1991 *Broadcasting Act*, the CRTC must hold public hearings in the following cases: issuing, revoking or suspending a license, "establishing a performance criteria as a criterion for the calculation of license fees, or the making of a mandatory order" (CRTC, 2007). There exist two sorts of public processes at the CRTC and public hearings are probably the ones most often associated with the Commission. Once the CRTC issues a call for comments, interested parties must

submit comments by a determined deadline and must state whether they would like to appear in person or not. Those who are deemed to potentially offer content substantially different than their written submission are then selected to present at the hearing. These procedural details come from my personal experience as a policy advocate. There is no users' guide to the CRTC, *per se*, making it difficult if not impossible for everyday citizens to engage in these forums. The CRTC website, likely their most direct method of contact with the public-at-large, does offer the basic logistical information needed for one to successfully submit an intervention and provides a link to the federal law detailing, in legal terms, the expected content of an intervention (CRTC, 2011c; Department of Justice, 2011). No attempt is made to describe in accessible, non-legal terminology what is expected of a lay-person who may wish to intervene. The CRTC provides a bare minimum of information useful for public intervention while making it clear that the system is most easily and comprehensively accessed by those with an expert knowledge of this system or those with the resources to engage such expertise. Rather than provide useful tools to encourage and enable substantive public participation, the tools provided enable a limited and elite pool of participants. Consequently, the CRTC is often seen as inaccessible and dominated by well-resourced private interests by established (yet under-resourced) civil society groups (Bougie, 2010; Côté, 2010; Lithgow, 2010; Robinson, 2010; Stevenson, 2010; Zaltz, 2010).

In addition to public hearings, administrative decision – also referred to as the "non-appearing public hearing" -- is a practice employed when the Commission determines that a public hearing where witnesses appear is not necessarily needed in order for them to make a decision concerning a license application or policy change (CRTC, 2007). Often referred to as a "paper hearing", this process will occasionally (but not

always) issue a call for comments, but provide no live public forum for feedback and debate. Many sorts of applications are addressed with a non-appearing public hearing. While some may seem insignificant, such as renewing a community broadcasting license in a remote location without a public hearing in order to save money, use of this mechanism also provides the regulator with the ability to make significant decisions outside public view. 2007 statistics show that 20% of the commissions decisions were made administratively with no call for comments, 40% were made administratively with a call for comments, and 40% were accompanied by a public hearing (CRTC, 2007).

The ability to physically and verbally interact with policymakers is a powerful thing. Whereas the effect of a written submission is unpredictable and ultimately unobservable by the author, a public intervention at a hearing is a chance to engage in dialogue and debate with the Commission itself and ultimately the opportunity to plead one's case. However, telling the CRTC that you would like to express yourself in person does not automatically mean you will be granted such a possibility – one must convince the Commission that there is added value to your personal presence that goes beyond your written submission. Nevertheless, there are no clear mechanisms for ensuring one's participation, but rather a set of rules for engagement that must be acquired (through trial and error, hiring professionals, or through the mentoring of others) and used to improve one's chance of being heard. In the case of the vast majority of decisions made by the CRTC, there are no clear mechanisms for ensuring the public is systematically given access to direct, dialogue-based participation.

For most users of the licensed radio spectrum, the CRTC is the public face of

regulation, charged as it is with regulating radio and television broadcasting (both traditional over-the-air and satellite broadcasting ). After all, this is the body that carries out public hearings on the licensing of broadcasters, providing any Canadian with the opportunity to comment on a pending regulatory decision and, in some cases, to plead their case in person. The CRTC, however, plays no direct role in the regulation of the spectrum, instead concerning itself only with the content transmitted. Industry Canada, through the *Radiocommunications Act* of 1989, controls the actual use of the spectrum. Power over the CRTC is centralized in the office of the Prime Minister and allowed to shift between ministries depending on the prerogative of the government in power. The Governor-in-Council, effectively the Governor General acting on recommendations of Cabinet, has the authority both to review CRTC decisions and to issue policy directives to the CRTC. This relationship is defined in both the 1991 *Broadcasting Act* and 1993 *Telecommunications Act* but no reference to it can be found on the website of the CRTC. Although they may have complicated and sometimes problematic relationships with the CRTC, many civil society groups organizing around the regulated spectrum (radio and television) ultimately tend to rely on the CRTC to help them participate in and understand the policy system (Côté, 2010; Robinson, 2010; Stevenson, 2010; Zaltz, 2010). Denying these actors who possess limited resources (financial, professional, etc) a comprehensive explanation of the policy system, the CRTC has not only tilted this system towards those with resources, but has forced civil society to learn by more exhausting methods, namely trial-and-failure.

Histories of broadcasting in Canada (Peers, 1969, 1979; Raboy, 1990b) and activism around citizen access to the airwaves tend to overwhelmingly focus their energies on the CRTC. This is not without reason. As an object of study, the CRTC provides

open access to ongoing public hearings and to documentation of past hearings and decisions. Since 2007, it has increased the resources available to community radio stations (NCRA, 2012) and undertook a lengthy consultation with the sector in the first half of 2009. This included sending a staff member to hold in-person meetings with station representatives in several parts of the country; through telephone conference calls; and one in-person meeting in Ottawa with community radio associations.[85] According to John Harris Stevenson, a longtime community radio advocate with the NCRA and current board member of the Community Radio Fund of Canada, the somewhat successful relationship between community radio and the CRTC that currently exists has taken decades to develop (Stevenson, 2010). However, the ability of traditional radio broadcasters to maintain a relationship with the CRTC, while important, is only a small strand of the web of relationships of power that determine who in society may use the spectrum today and who may use it in the future. Increasingly it appears the Privy Council lies at the centre of this web. This can be well illustrated by an exchange I had with a senior Industry Canada official in 2009, who insisted that he would be happy to reserve frequencies for community radio if the CRTC asked him to. When I explained that the Chairman of the CRTC had twice informed me that it was the role of Industry Canada to reserve frequencies, he replied: "In that case, your problem is much more political than technical or administrative" (Vaccani, 2009). Accessing this sort of political power is not something that communications-oriented civil society organizations have yet attempted in Canada. To the contrary, the private sector has a long history of Cabinet-level interaction that, as documented by Richard Schultz, recently resulted in a market-focused re-orientation of CRTC telecommunications policy (Schultz, 2008). Should the requisite political power be mobilized, the CRTC can be directed to

85 No longer a director of the NCRA at this point, I was nonetheless invited to attend as an independent expert. I was not, however, allowed to make an audio recording of the meeting.

conduct itself in certain ways.

### 4.5 Canadian Heritage

As noted earlier, the CRTC's decisions can, in fact, be questioned and overruled by the Governor-in-Council, even though they are often touted as an "arm's length regulator". The Minister of Canadian Heritage is "responsible for providing the Governor-in-Council with advice on petitions to the Governor-in-Council regarding decisions made by the CRTC to issue, amend or renew a broadcasting license" (Canadian Heritage, 2011a). Canadian Heritage is another influential point of entry into the spectrum policy system, with the ability to affect decisions concerning its use. A petition to the Governor-in-Council to issue an order-in-council is a form of appeal that can be used to challenge a decision made by the CRTC. Between 1991-2011, 44 such petitions were made. Canadian Heritage recommended on seven occasions that the CRTC revisit or amend their decision (Canadian Heritage, 2010). While several attempts were made to interview officials at Canadian Heritage, I never received a reply to multiple phone calls and emails. As I attempted to arrange an interview in-person, I was told that I could not speak to anybody at Canadian Heritage if I did not already have an appointment. This was the only government body in Canada or Uruguay that did not respond to interview requests over the course of this research.

### 4.6 Industry Canada

By virtue of the *Radiocommunications Act* of 1989, the Minister of Industry is the sole administrator of the spectrum and is also responsible for coordinating Canada's spectrum policy with the ITU. While its relationship with the ITU is quite formal, domestic policy venues tend to be quite informal. Here, I examine decision-making

frameworks concerning administration of the spectrum in Canada. I then analyze four particular spectrum-related policy venues that have been either initiated or housed by Industry Canada or the Ministry of Communications (which preceded Industry Canada), and determine the extent to which these venues were participatory and inclusive.

### 4.6.1 Industry Canada: General spectrum decisions

All users of the spectrum must apply for and receive an authorization from Industry Canada in order to use a designated section of the spectrum. A number of uses such as wireless internet (Wi-Fi), cordless telephones, garage door openers and other similar technologies are designated as unlicensed. There are three methods by which to apply for such an authorization depending on what the spectrum will be used for. The primary characteristics these methods all have in common are:

1) All methods lack of any sort of public process;
2) Documentation of decision-making processes, if kept, is generally unavailable to the public;
3) Each method demonstrates poor or non-existent methods for engaging with the public. The only notification methods utilized regularly are the Industry Canada website and the Canada Gazette – the official newspaper of the Canadian government and a model of inaccessibility and poor design.

The majority of applications for spectrum use – 95% - are granted on a first-come first-served basis (Industry Canada, 2010b). In other words, decision-making in most cases is purely administrative. If forms are filled out properly and the proper sum of money is paid, the spectrum is yours to use. With no venue for debate or public intervention of any sort, most spectrum licenses are granted outside of public view. Acquiring spectrum in this manner is simply a commercial transaction for which

yearly license fees are paid. The second way in which spectrum is licensed for use is almost as efficient in terms of limited bureaucracy. Broadcasters, before applying to the CRTC for a license to broadcast, typically hire a consultant to prepare a technical brief illustrating that a frequency they would like to use is free. If Industry Canada agrees with this technical finding, the broadcaster in question receives exclusive permission to use that frequency on the condition that their application to the CRTC is approved as well. Only broadcasters need obtain a license from the CRTC.

The third manner by which spectrum is acquired is through public auction, a practice that first began in Canada in 1998, although the Minister of Communications was first given this power in 1989 (Department of Justice, 1989, p. 7). The general public is asked to submit feedback on proposed auction rules and generally given "45-90 days" to reply (Industry Canada, 2007a), but there has never been a public debate on the merits of spectrum auctions. Generally, Industry Canada engineers and policymakers designate an unused (or soon to be vacated) segment of the radio spectrum for a specified future use, which is then auctioned to the general public to use in that specific manner. For instance, the 2008 auction that helped Canada's new cellphone providers begin operating was aimed at cellphone use while an upcoming auction tentatively scheduled for 2013 may be aimed at rural broadband development (Sharp, 2011). Applicants must submit a pre-application that is then judged according to criteria that varies with every auction (Industry Canada, 2007a). The financial barrier for entry appears to depend on the potential uses and ensuing "attractiveness" of a certain set of frequencies. For instance, a 2009 auction of the 2300-3500 mHz section of the spectrum attracted winning bids for as little as $700 while the potential uses of this spectrum appear to be relatively experimental (Industry Canada, 2009c, 2009d). On the other hand, the 2008 cellular telephone-focused spectrum received a

range of successful bids spanning from $739,000 to $999,367,000 (Industry Canada, 2008a). Auctions can generate considerable public funds which are directed into general government revenue. According to anonymous sources at Industry Canada, the 2008 spectrum auction generated $4.3 billion that was originally destined to fund rural broadband development. Ultimately, once everybody was "on-board" at Industry Canada and the auction had occurred, the federal government decided to alter the amount provided for rural broadband development to $250 million distributed over five years (2010b).

### 4.6.2 Making spectrum policy

The ways in which spectrum policy itself is made are difficult to determine and to document. While there are groups inside Industry Canada dedicated to making policy, they have no public relations mandate and are thus difficult to make contact with (Industry Canada, 2010b). The following is a presentation of the Industry Canada spectrum policy forums known to exist, their specific mandates, and a general statistical analysis of the participation of different actors.

#### Technical Advisory Committee on Broadcasting

The Technical Advisory Committee on Broadcasting (B-TAC) is an ad-hoc committee that has been been in existence since 1966, predating both the CRTC and the Ministry of Communications. A joint government/industry committee, it advises Industry Canada on technical standards, regulations and policy (Industry Canada, 2009e). However, until quite recently basic record-keeping procedures, such as the conservation, publishing and archiving of minutes, were not employed. According to the current secretary of the committee, this was because:

> B-TAC meetings used to be very small in attendance. Formal minutes

> were not always produced, or saved. Once the B-TAC ideas became integrated into the BPRs, the minutes were no longer needed. That is a prime source for you. Any IC (Industry Canada) policy ideas would be built into the Broadcast Procedures and Rules (BPRs). These are available on the IC website. (MacMillan, 2010)

It would then seem that the influence of this committee on broadcasting-related spectrum policy has been substantial as the Broadcasting Policies and Procedures fundamentally define the technical conditions under which all communication over the spectrum can legally occur in Canada. This includes "AM, FM, TV, digital radio broadcasting (DRB), multipoint distribution television broadcasting (MDS), digital television (DTV), broadcasting receiving (cable TV) and terrestrial S-DARS (satellite radio)" (Industry Canada, 2009a). Minutes and participation records are entirely unavailable from 1966-2004. Previously, only those from 2007-2010 were available online and minutes from 2004-2006 were provided by the secretary of the committee. These were added to the online archive shortly after I enquired about them. The following graphic presents the participation of various actors at the B-TAC from 2004-2010.[86]

86 I attended a 2008 workshop on spectrum policy given by Paul Vaccani, director of broadcast engineering at Industry Canada. Upon learning of the B-TAC in this workshop, I suggested to the National Campus and Community Radio Association (NCRA) that they should attend. Civil society groups had never participated before this point.

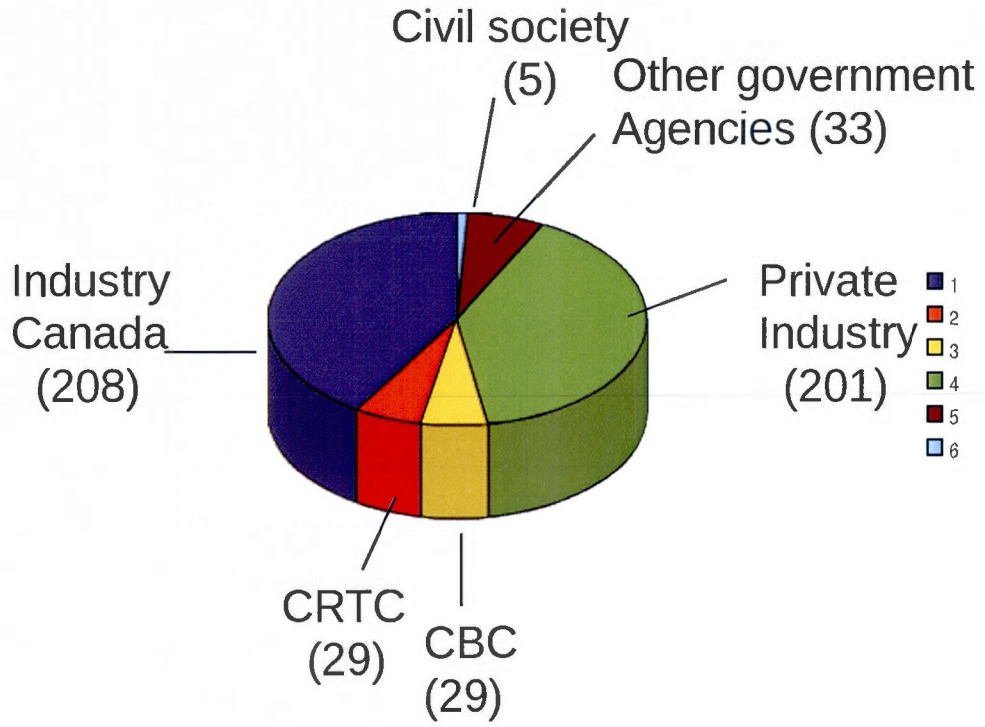


**Figure 9: B-TAC Participation, 2004-2010**

Quite a bit of information can be found in the minutes of this ad-hoc committee, including discussion of the possibility digital radio migration, the development of digital television standards, reports on technological developments in the United States, and how these developments may affect the future of broadcasting in Canada (Industry Canada, 2004a, 2004b, 2004c, 2005a, 2005b, 2005c, 2006a, 2006b, 2006c, 2007b, 2008c, 2009b, 2009f, 2010a). Some insight can also be gained into the usefulness of this forum to its private actors. At the second B-TAC meeting of 2005, seven days after Canada's lobbying legislation was fortified (Commissioner of Lobbying of Canada, 2010), the chair advised the committee that:

> (A)lthough the Act would require lobbyists who may influence

> governmental policies and regulation through lobbying to register, he believed that B-TAC was an open forum with published minutes for public access and therefore would not fall under the requirement of the Act. However, he strongly recommended that any outside members who had regular dealings with the Department to register for the sake of certainty. (Industry Canada, 2005b, p. 7)

As I examine other spectrum policy venues, I will show that the inclusion of – if not guidance by – industry in spectrum-related policy forums and the exclusion of civil society appears to be a general rule. Recent involvement of civil society in the B-TAC is, if anything, an anomaly not of any particular use to newly included parties. Indeed, the lack of technical knowledge prevents civil society from engaging in this venue in an any concrete manner (Industry Canada, 2010a; Robinson, 2010) and some appear happy just to be included (Zaltz, 2010).

**Digital broadcasting**

Digital broadcasting is a form of broadcasting that uses the radio spectrum in a more efficient manner than traditional analogue broadcasting. For this reason, internationally coordinated plans have been in development since the 1990s to transition both radio and television from analogue to digital broadcasting (Light, 2010). In 1995, Industry Canada formed a Task Force on the Implementation of Digital Television. However, "funding for the research and writing of the report was provided by the private-sector membership" (Taylor, 2009, p. 242). If one examines the composition of the task force, it is quite easy to see that almost every member was industry-based and there was no single civil society representative of any sort, despite the fact that there were, for instance, dozens of community television stations across the country (Canadian Heritage, 1997, pp. 42–44). Indeed, closer examination shows that this reliance on private industry to engage in research and policy-making has

driven the entire process of digital transition (Taylor, 2009). Taylor compares the Canadian process to the digital television transition in the United States where nine representatives on a committee of 22 were from outside the industry in question (2009, p. 244). Digital television transition is a process that will ultimately culminate in the 2013 auction of radio spectrum used until August 2011 for analogue television broadcasting (Sharp, 2011). There are many potential uses for this spectrum, including the development of nation-wide community-owned and managed communication networks (Light, 2010). However, the development of non-industry owned communications networks is doubtful as long as citizens and their communities are systematically excluded from the processes that could make such things possible. Understanding that the spectrum is a political issue and that public access to the pertinent policy venues has been historically and systematically limited, the very concept of public consultation concerning spectrum policy in Canada must be revisited and revised if future results are to ever differ from those presented thus far. The spectrum policy system, as a set of venues for public consultation and public policymaking, is broken. The remainder of this chapter continues this vein of analysis by continuing to interrogate the policy system and its failure to integrate citizen actors and non-market ideas.

The third spectrum policy venue that will serve as an example here is one quite similar to the Task Force on the Implementation of Digital Television. The Digital Radio Co-ordinating Group (DRCG) was formed as early as 1989 by the Canadian Association of Broadcasters when Canadian interest in digital radio broadcasting was inspired by developments in Europe (O'Neill, 2007, p. 74).[87] As in the case of digital television, government regulators looked to the industry for their expertise. "While

87 The Canadian Association of Broadcasters disbanded and reorganized in 2010. They did not reply to multiple interview requests related to this research. http://www.cab-acr.ca.

representatives of government departments and agencies sit on this committee, their primary role is to provide advice and consultation on technical issues of common interest" (Digital Radio Co-ordinating Group, 2007, p. 1).[88] Parallel to this industry-driven group, the Ministry of Communications established a Task Force on the Introduction of Digital Radio in Canada (Groupe de travail sur la mise en oeuvre de la radio-diffusion audionumérique, 1995a, p. 3). A much smaller working group than either the Digital TV task force or the Digital Radio Co-ordinating Group (each counting over 30 members), the Digital Radio task force had eight members, one of whom represented the nation's three community radio associations. While the DRCG carried out engineering tests and studied the technical feasibility of digital radio, the Task Force appears to have been created to provide an official public face for a very private effort. It's work culminated in the government-published pamphlet "Digital radio. The sound of the future: the Canadian vision" (Groupe de travail sur la mise en oeuvre de la radio-diffusion audionumérique, 1995b). Lucie Gagnon, then head of the Association des radiodiffuseurs communautaires du Québec (ARCQ), revealed to me that she felt her presence was a token gesture – as if she had been chosen because she was "French, from the community sector, and a woman" (Gagnon, 2005). Thus, only one civil society representative was included in any of the bodies working on the country's future television and radio infrastructure. Ultimately, the evolution to digital radio stalled for a number of reasons: changing listener habits (online listening) and resistance from the auto industry among them (Industry Canada, 2010b; O'Neill, 2007, p. 79). This does not, however, discount the fact that relevant civil society organizations were not included in the processes developed around it.

### 4.6.3 Industry Canada and the ITU

88 In my former capacity as a director of the NCRA I attempted to join the Digital Radio Co-ordinating Group. My request for membership was ignored.

The International Telecommunications Union (ITU) is a United Nations-based body responsible for coordinating the radio spectrum and satellite orbits internationally. Presently, the ITU counts 192 member states, 532 sector (industry) members, 148 associate members (mostly industry) and five academic affiliates (International Telecommunications Union, 2011). It maintains a table of frequency allocations that is the reference point for all domestic spectrum regulation and holds a conference every 4-5 years to update the table and coordinate spectrum policy between countries. On the national level, Industry Canada maintains a consultative structure that informs its actions at the ITU conference. According to an anonymous Industry Canada employee, "any interested Canadians can participate in our participatory process. And when we go (to ITU meetings) they're also welcome to be members of the Canadian delegation to ITU-R meetings" (Industry Canada, 2010b).

While this consultative process does exist, no information on participation mechanisms can be found on the website of the Canadian National Organization (the name for this body/process) (Industry Canada, 2011a). A website description shows a number of National Study Groups focused on various technical issues concerning spectrum use and regulation, although none touch on social issues. An email exchange with one of the Industry Canada representatives responsible for this process revealed that members -- "Canadian experts" -- are invited by executive members of the committee "as appropriate, to join in a CNO meeting." The history of participation in these meetings is considered as "limited to the CNO Administration and not for public disclosure" (Roderick, 2011). However, the steering committee of the Canadian National Organization consists of Industry Canada, Bell Canada, Erisson Canada Inc., EXFO Inc., Microsoft Canada, Research in Motion, Rogers Communication Partnership, and TELUS Communications Inc. (Industry Canada,

2008b).

As manner of experiment, I asked to be considered for membership in the CNO. While my request was accepted, the weight of my participation – no matter my expertise – will be limited compared to dues-paying representatives of industry members. Non-industry experts may request to participate, but the following obstacles disallow meaningful participation by citizen and civil society actors:

- Only national governments, corporations and a small number of civil society organizations are members of the ITU. No Canadian civil society organizations are members.

- Decision-making in study groups is done by consensus. However, "participants from organizations that are not ITU Sector Members or Associates shall not prevent consensus" (Industry Canada, 2008b, p. 8).

- There is no mechanism to financially support civil society or citizen participation.

Ultimately, I was granted membership in the Future Networks Study Group which meant being the recipient of no more than 10 emails over a period of 10 months, an invitation to an ITU workshop on digital signage (in Geneva), and an invitation to a telephone meeting discussing security and future networks that was ultimately attended by five Industry Canada staff, the chair (an independent consultant) and a second consultant.[89]

Participation in Study Groups appears to be the only way in which a member of the public can participate in debate over spectrum policy in a way that may influence Canadian positions in negotiations with the ITU or the way that Industry Canada applies ITU spectrum standards. I gained access through the following steps:

89 While unable to attend, I was, as a member of the group, sent a copy of meeting minutes.

1. I was lucky enough to have had coincidental contact with a senior bureaucrat at Industry Canada who served as my entry point. This was followed by four months of negotiations to obtain an interview with Industry Canada staff.
2. Post-interview follow-up discussion with Industry Canada staff led to a personalized introduction to a "gatekeeper" who coordinates participation in the CNO.
3. Two months spent negotiating and waiting to attain membership.

I was allowed to join the Study Group of my choice and observed that each operates according to a uniquely economic or technical imperative. Social effects and uses of spectrum-bound communication are wholly absent from the mandates of these committees. Based on my experience and the data shown here I can conclude that domestic participation in the groups that set the international standards for spectrum policy-making is limited to a very small segment of Canadian society, heavily dominated by industry. Marginally participatory, the structure of the organization and its decision-making processes are such that non-paying members, having somehow gained access, remain ultimately powerless.

### 4.7 Lobbying and communications policy-making in Canada

> I didn't know you had to provide cheese biscuits and wine in order to get legitimacy on Parliament Hill. Like who knew, right? Well, now I know. And it's like, this is what I would tell people. "Go give people free cheese biscuits and wine and then you'll be taken seriously." That stuff needs to be made public, right? (Lithgow, 2010)

As shown throughout the preceding analysis, spectrum policy-making in Canada has been structured and influenced by a close and collaborative relationship between private industry, federal regulators and elected officials since at least the 1960s.

While I have been able to show concrete evidence of this relationship, I believe the true extent of it remains hidden, or at least difficult to identify and trace. This is due, at least in part, to the Canadian government's regulatory approach toward the lobbying process and a tepid interest in lobbying research on the part of Canadian communications academics and civil society advocates. Marc Raboy's book on channels of influence in Canadian broadcasting remains unique as an academic text dedicated to communications policy lobbying in Canada (Raboy, 1995a). A number of books on lobbying in Canada were published in the 1980s but tend to be either first-person accounts of lobbying scandals (Harrison, 1988), general overviews of the issue of lobbying from municipal to federal levels across Canada (Malvern, 1985), or "how-to" manuals (Sarpkaya, 1988). Since the 1990s, lobbying literature in Canada has largely concentrated on lobbying regulation, and the country is often used in comparative case studies on the subject (Chari et al., 2007; Holman & Luneburg, 2012; Ronit, 2011; Rush & Rush, 1994). Modest attention has been given to lobbying and environmental policy (Abelson & Abelson, 1995; Montpetit, 2003; Savan, Gore, & Morgan, 2004) and a notable book by Health Canada whistle-blower Shiv Chopra recently exposed lobbying practices in food and drug regulation (Chopra, 2009). An important exception to the dearth of of academic treatments of communication policy lobbying is a recent book chapter by Richard Schultz. In this piece, the author provides minute detail into the strategies used by former Minister of Industry Maxime Bernier to overcome widespread resistance both within and outside of the Privy Council to successfully issue a policy directive to the CRTC guiding them to make telecommunications decisions according to "the market" (Schultz, 2008).

Today, lobbying plays an important yet immeasurable role in Canadian policy-making. It is an activity that allows individuals and organizations to build

relationships with public officials and to use these relationships in order to gain support and legitimacy within the interconnected policy system. While it is impossible to quantify the effects of lobbying on spectrum policy due to the Lobbyist Registry's general lack of specificity regarding lobbying topics, it is included as part of the broader analysis provided here to provide a comprehensive account of the policy system.

According to the Organization for Economic Co-operation and Development (OECD), "lobbying involves solicited communication, oral or written, with a public official to influence legislation, policy or administrative decisions" and is a concept that goes back many centuries (OECD, 2009, p. 20). Regulation of lobbying is a fairly new phenomena, and Canada's *Lobbyists Registration Act* was first passed in 1989. While it required paid lobbyists to "provide information about themselves and the subject matter of their lobbying" (Commissioner of Lobbying of Canada, 2010), no public official appears to have been responsible for the care-taking of this information until amendments in 1997 gave this responsibility to the Ethics Commissioner. In 2004, the Office of the Registrar of Lobbyists became an official unit of Industry Canada (Commissioner of Lobbying of Canada, 2010), today the second most heavily lobbied part of the federal government (Office of the Commissioner of Lobbying of Canada, 2012).[90] Finally, the Office of the Registrar of Lobbyists was moved to the portfolio of the Treasury Board as an independent entity in 2006.

Lobbying in Canada is a difficult thing to analyze. While an online database of

90 The Registry of Lobbyists amalgamates this data each day. While observing trends over the course of 2011, I noted that Industry Canada and the House of Commons were consistently the two most heavily lobbied sections of government.

lobbyist activity exists, lobbyists are required to register their actions of their own accord. I have been unable to ascertain if there is active "policing" of non-registration and thus cannot say that the content of the database is either definitive or representative of what actually occurs. In early 2011, having judged the Registry's online search tools inadequate, I consulted directly with Registry staff. Ultimately they provided me with a set of exported spreadsheets containing the entirety of the Lobbyist Registry.[91] Upon closer examination I came to realize that the data collected is insufficient to be able to concretely connect lobbying activities to discrete policy-making decisions. Specifically, lobbyists are only required to provide broad topics relative to their meetings with public officials. "Telecommunications" or "broadcasting" can mean many different things and there is no easy way to determine more granular topics of discussion. In addition, only paid lobbyists are required to file their activities. This makes it impossible, for instance, to conduct an analysis comparing corporate lobbying in the field of telecommunications to the lobbying activities of civil society where such work is often conducted by unpaid volunteers.[92] Accordingly,

> the United States, and to a lesser extent Canada, fosters an industry where entry is virtually uncontrolled; and both consultant and in-house lobbyists can, as long as they are adequately supported financially, exploit access to a variety of decision points. Lobbyists thrive as nimble and versatile guides to complex, diffuse and dynamic systems. (OECD, 2009, p. 43)

Such a regulatory environment is thus difficult for inexperienced and under-funded civil society organizations to navigate and take part in (Lithgow, 2010; Morrison,

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91 They also remarked that they only had two or three similar requests from academics but are eager for people to utilize their data and even offered me monthly updates on CD.

92 For instance, as a director of the NCRA, I, and several others, lobbied numerous MPs and the CRTC in an effort to gain political traction for the creation of the Community Radio Fund of Canada. These meetings were never documented.

2010). Civil society organizations occasionally engage in lobbying, either at the behest of experienced insiders (Lithgow, 2010) or as a matter of refined practice by a uniquely experienced and placed individual (Morrison, 2010). A regulated lobbying environment has thus created a system that appears to be calibrated for opacity rather than transparency.

Influencing short-term and long-term policy-making processes is about much more than engaging in an act defined as lobbying. It also includes a host of practices that have been embodied in the culture of communications regulation for decades.

> In terms of the commission (CRTC), um. The formal process that you see is the tip of the iceberg. And it doesn't necessarily indicate what's going on beneath the surface. There are a lot of informal contacts taking place, and that may or may not be recorded as lobbying visits, what have you. People can pick the phone up and call somebody. People take each other out to lunch. People hire each other. They hire people, staff and commissioners, are hired back and forth and some of them have backgrounds – many of them have backgrounds – in commercial media or BDUs (broadcast distribution undertaking) or whatever. (Stevenson, 2010)

The policies developed through decades of collaboration between corporate interests and federal regulators affect spectrum-enabled communication of every sort, not simply in its mechanics but also in understanding what this form of communication truly entails. Examples of this phenomena can be observed in this chapter's earlier analysis of the law-making processes that resulted in the 1989 *Radiocommunication Act*, 1991 *Broadcasting Act*, and 1993 *Telecommunications Act* where it appears that corporate actors were invited to explain to Parliamentary committees the relationship between proposed legislation, wireless communication and their specific businesses. Indeed, in reading the minutes of committee meetings, it is hard to avoid the cozy familiarity between corporate actors and law-makers and a sense of respect and

deference given to private sector acumen and expertise.

### 4.8 The institutionalization of informality vs. the urgency of convergence

The ability to engage in informed participation in spectrum policy-making requires that participants have the ability to engage in meaningful dialogue and that through such dialogue they can concretely become part of larger decision-making processes. In order to do so, citizens and the groups they organize and act through need access to knowledge of the radio spectrum and how it is regulated at every level of bureaucracy domestically and internationally. In my research, I've found that communication-oriented civil society groups in Canada, without exception, lack this basic knowledge. This handicap has contributed to a regulatory system from which citizens and civil society are largely excluded.

The spectrum policy-making system employs two general routes by which external parties participate in the making of policy: 1) formal inclusion to varying degrees; 2) informal methods of consultation and collaboration. As documented in this chapter, the mere existence of systems for participation does not mean that these systems are equitably accessible to all interested parties. Access to these venues may be gained over time as relationships are developed between, for example, civil society groups and regulatory agencies. However, these sorts of relationships require a heightened level of professionalism that is not necessarily a natural part of the value-sets or organizational structures of these groups. Groups that have succeeded in building such relationships have only done so in recent years by "learning how to play the game" (Stevenson, 2010). The rules of "the game," however, are difficult to gain access to and are more often gained through years of institutional trial and error rather than the availability of an actual rule-set or guide.

Canada's communication and media system is today at a crossroads as media and communications actors – both corporate and community – actively engage in the elaboration of a converged system. This crossroads should be of no surprise, for the Canadian policy machine has been making preparations since the publication of *Instant World* by the Department of Communications in 1971 (Government of Canada, 1971). The summary results of a series of studies undertaken on the future of communications technology and Canada, *Instant World* demonstrated that while the future was bright, it was also deathly complicated. This first enquiry was, in essence, more concerned with the urgent matter of reliable infrastructure than how this infrastructure might be used for the common good. Roughly twenty years later, a group of researchers at the Broadcast Technologies Research Branch of the Department of Communications issued an exploratory report considering how it might be possible to merge the disparate worlds of broadcasting and computing (Phillips et al., 1992). Written by a group that did not include a single economist, it relied on "psychologists, engineers and research scientists" and was "looking at possibilities" rather than at what could be done through regulation (CRTC, 2010d). Following a further twenty years of incubation, the CRTC issued two reports painting the future of converging policy and technology in a very different light and aiming to determine the precise regulatory implications of this change (CRTC, 2010a, 2011a).

> A number of technological advancements underpin the social and economic changes leading to convergence: the digitization of communications, information and audio-visual content; growth in broadband speeds, capacity and penetration; and the development of new network infrastructure such as fibre-based networks and mobile broadband. Convergence is transforming the communications landscape and blurring the boundaries between previously distinct spheres. (CRTC, 2011a)

Convergence is seen as a precipice, a moment of unstoppable change that the

Canadian regulatory system is hopelessly unprepared for and over which it maintains increasingly less control, to paraphrase out-going CRTC chairman Konrad von Finkenstein (Pitts, 2012). This odd situation, where a regulator is in the midst of losing power over that which it controls, presents what Robert McChesney has termed a "critical juncture", a crucial opening in the tightly woven fabric – or in the case of Canada a labyrinthine mesh - of the communications policy system (McChesney, 2007, pp. 106–115). Given the entrenched positions of the dominant actors in the policy system, the innate instability of such moments presents a unique opportunity for political and policy reform and engagement.

As this chapter has demonstrated, the Canadian policy-making system consists of multiple venues of different yet overlapping responsibilities and different levels of accessibility. Throughout this system there are markers of an institutionalization of informality that gives privileged access and influence to a small number of actors at the general exclusion of Canadian citizens. It is complimented by a recognized lack of transparency with regard to decision-making methodology (House of Commons, 2011), lack of information on basic policy practices, and inconsistency in public participation mechanisms where such mechanisms exist. Thus, the important entry points for public participation in law-making are ineffective in integrating the concerns of citizens in an open, accessible and transparent manner. The ongoing convergence of communications technology that relies increasingly on the radio spectrum presents a critical moment for communicative democracy. To build or reform the spectrum policy system – no less than a system of social, economic and cultural governance – would require the informality that pervades this system to be brought to light. It would require popular and political will and an interest in reforming not simply the spectrum policy system in the form it is often packaged in,

but a holistic approach to reform that recognizes the need to rebuild this system upon a just foundation. Such a holistic approach to policy reform demands that academics and activists expand their traditional media-centric boundaries to include the totality of the policy system.[93] At risk is nothing less than the fundamental ability of citizens to actively participate in democracy and to claim the power of citizenship as opposed that of the consumer.

93 This includes incorporating other fields, such as copyright, which directly impact the communication and media system.

## 5. Case Study: Uruguay

While wireless means of communication have been actively used in Uruguay since the early 1900s, regulation of the spectrum is still very much in development. Indeed, Uruguay presents a fascinating case where commercial and state-operated broadcasters and telecommunications companies compete with one another. Hundreds of community radio stations have requested licenses during a recent process of legalization, and potentially hundreds of other stations will continue to operate as "pirates." Remarkably, Uruguay became the first country in the world with an entirely digitized wire-line communications infrastructure in 1997 (ANTEL, 2012). The cellular telephone penetration rate has increased from just 34.9% to 141.2% (URSEC, 2011) leap-frogging the need for a wired telephony infrastructure. Over the past six years, the federal government has rolled out the One Laptop Per Child program (OLPC, also known in Uruguay as Plan Ceibal) to 100% of public elementary students. Wireless has become the way forward, yet its users operate not so much in a policy vacuum, but a policy framework of porous, mobile and disparate form that is in constant, stuttering, evolution. This case study of Uruguayan spectrum policy aims to document the practices that have led to the development of the current system and which continue to drive it forward in the context of convergence. It analyzes recent efforts to introduce formal regulatory systems and new mechanisms for public participation in policy-making. I draw primarily upon secondary sources as guides for historical analysis while evaluation of the current system relies largely upon extensive primary data gathered between 2009-2012. Primary sources include parliamentary records and other documentation, and interviews undertaken with government ministers, law-makers, civil society organizations, regulators, union organizers, independent experts and the private sector as well as follow-up

communication with interview subjects.[94]

### 5.1 Legal frameworks and regulatory histories

Unlike the history of communications policy-making in Canada, policy-making in Uruguay has not been accompanied by lengthy processes of examination and consultation that frame or provide an evidentiary foundation for laws and policy frameworks. Instead, there is a history in which laws and Presidential decrees are scattered about, evidence perhaps of a law-making apparatus unable or unwilling to make communication a focal point. The disjointed nature of this history, though, presents an opportunity to appreciate the evolution of communications policy and law as a narrative strongly connected to the evolution of a society as it moves into and out of dictatorship (1973-1985), through the neo-liberalism of the 1980s and 1990s and into its current process of democratization.[95] This is a phenomena that has been observed in several cases around the world (Price et al., 2002) with Faraone noting, in 2002, that "media reform has paralleled Uruguay's transition to democracy" (2002, p. 222). This chapter aims to evaluate the current state of the regulatory system in terms of democratic transition by assessing the ability of citizens to participate in the system in substantive ways.

As with several other countries in the world, wired telephone systems were developed in Uruguay in the late 1870s. The country's first phone call was made in 1878 (ANTEL, 2012). In 1896, the first state telecommunications network was created by

94 As in the case of Canada, only one private sector actor granted me an interview. This was conductedwith Rafael Inchausti, president of the National Association of Broadcasters of Uruguay (ANDEBU).

95 Democratization of governance has been a focal point of the current government. For example, the digital publication of Parliament, called "Constructing Democracy" presents itself as a tool for improving communication between the government and citizens. http://www0.parlamento.gub.uy/forms2/NoticiasDelParlamento.asp

Presidential decree and began to operate under the umbrella of the National Mail and Telegraph Directorate. Uruguay would then join the ITU in 1903, well ahead of both Canada and the United States, who joined in 1908 and 1912 respectively (International Telegraph Union, 1903, 1913). In the following years, the government adopted a strategy of strengthening state institutions, nationalizing key private industries and developing the early framework for a social welfare state (Frega, 2008). In 1915, Parliament introduced a bill creating the General Mail, Telegraph and Telephone Administration and granting the state a monopoly over postal, telegraph, and telephone service (Parlamento del Uruguay, 1915).[96] In the years immediately following, President José Batlle y Ordónez introduced a reorganization of executive powers with the creation of the Consejo Nacional de Administración (National Council of Administration) composed of six members of the ruling party and three members of the minority party. Under this structure, the President maintained control of foreign relations, national security and agriculture while the Council was responsible for all other domains of governance (Library of Congress, 1992; Rodríguez Ayçaguer, 2008).

In 1922, Radio Pradizábal, Uruguay's first commercial radio station, set up operations in downtown Montevideo (Maronna & Rico, 2007, p. 396; Maronna & Sánchez Vilela, 2006, p. 106). It was quickly followed by CX14 El Espectador and Radio Montecarlo in 1924 (both still on the air today), and CX30 Radio Nacional in 1925 (Maronna & Rico, 2007, p. 396). As in the case of Canada, commercial radio broadcasting was born outside of any regulatory framework. The

96 It is worth noting that Uruguay was quite forward-thinking in the early 1900s. For instance, this same bill also stipulates that children under 16 years of age may work a maximum of 6 hours per day (Art. 47); and workdays for women must not exceed 8 hours (Art. 48). In case of childbirth, women were guaranteed 3 weeks paid leave before and after. While perhaps not unique in terms of labour law, it is interesting to see social welfare integrated into otherwise technical policy.

*Radiocommunication Act* was passed in 1928 and the Radiocommunication Services Directorate was given the task of spectrum management, although in some cases (it was not specified which) the Minister of Public Education would be involved (Bouissa, Curuchet, & Orcajo, 1998, p. 102; Inchausti, 2010; Parlamento del Uruguay, 1928). The following year, the government staked a claim to radio broadcasting with the creation of the public broadcaster, SODRE, which was given preferential treatment in the granting of frequencies, an arrangement still in place today (Parlamento del Uruguay, 1929). Finally, the General Administration of State Electrical Plants and Telephones was created and given powers over the national telephone system and electrical plants. Private telephone companies were permitted to continue to operate with the warning that their licenses were "precarious and revokable" (Parlamento del Uruguay, 1931).[97]

Times were tranquil with respect to spectrum policy from roughly 1931-1974, although Uruguayan history was otherwise quite tumultuous. During this period, the country endured a brief dictatorship in the 1930s followed by a period of political reconstruction in the 1940-1950s. A plebiscite in 1952 resulted in the creation of a nine-member presidential council taking the place of a singular President (Ruiz, 2008, p. 149). While left-wing political parties had been active in Uruguay since at least the 1920s, the political system nevertheless remained controlled by the two traditional parties – the Blancos and the Colorados.[98] Throughout the 1950s and 1960s, the government was increasingly a part of the Cold War. Perhaps mirroring global tensions, the 1960s were punctuated by regular violent episodes between ultra-right and ultra-left groups, exemplified by the founding of the Tupamaro guerrilla

97 Today, commercial broadcasting licenses are known to be "precarious and revokable", depending ultimately on the political climate.

98 In Canadian terms, the Blancos are similar to the Conservatives and the Colorados are similar to the Liberals.

movement and the formation of the national central union (Ruiz, 2008, pp. 140–160). In 1967, the Uruguayan government embarked on a process of economic reform designed by the International Monetary Fund and this first attempt at liberalization was met by resistance from organized labour. Violent reaction on the part of the state (including torture) led to further instability (Ruiz, 2008, pp. 140–166). It can therefore be assumed that during these four decades, communication policy fell by the wayside while successive governments focused on ostensibly more fundamental matters of economic and political stability. A similar history can be seen in Argentina where communications practices and industries developed with little policy design or guidance and where recent political reform has also been accompanied by substantive reform in communications and media policy (Loreti, 2011; Mastrini, 2005).

In 1974, one year into Uruguay's 13-year long dictatorship (1973-1985), the telecommunications corporation ANTEL was created as a state monopoly (Alonso et al., 2010; Parlamento del Uruguay, 1974). The following year, a new broadcasting act was introduced, replacing the *Radiocommunication Act* of 1928 and defining the first normative framework for broadcast licensing. This law, still in effect today, provides the presidency with the exclusive power to grant and revoke broadcast licenses (Parlamento del Uruguay, 1977). The exact mechanisms by which this might occur remain non-codified and thus largely subject to the interpretation of each President.

In the 1980s, the Presidency further concentrated power over the spectrum, first by creating the National Communications Directorate within the orbit of the Department of National Defence as a specialized entity for spectrum management. This was done by Presidential decree in 1984, shortly before the end of the dictatorship (Alonso et al., 2010; Parlamento del Uruguay, 1984). Shortly after, on June 12, 1985, the Senate

unanimously approved legislation that would move the National Communications Directorate within ANTEL and away from direct Presidential influence. Ultimately, the legislation was vetoed by the President, assuring that the spectrum would remain firmly within the grasp of the Presidency, both in terms of technical management and the granting of licenses (Bouissa et al., 1998, p. 103). The following 25 years would see responsibility for managing the spectrum relocated three times and power over it more centralized and rigidly defined.

While the political establishment strengthened its hold on the radio spectrum, a variety of social movements in the 1980s began to collaborate and organize around the theme of communication. This period has been noted as the origin of Uruguay's community media movement and contributed to the formation of numerous community newspapers and radio stations (Bouissa et al., 1998; Light, 2012a; Robledo, 1998; San Martin, 2008, pp. 206–209). The year 1989 saw the passage of a law that today serves, in part, as legal grounding for independent media and communications movements by declaring that in order to satisfy a citizen's defined right to free expression, everyone has the right to "found a medium of communication". That said, while the *Press Act* of 1989 concerns itself with liberty of expression and freedom of the press, it also codified defamation as a criminal, as opposed to civil, offence and defines it in such a broad manner as to be potentially wielded as a tool of censorship (Gómez, 2005, sec. 2.1; Parlamento del Uruguay, 1989). The same legislation ensuring free speech also places strict limits on it, where the ultimate penalty is imprisonment.

The concentration of power over wireless communications continued into the 1990s against the backdrop of privatization efforts underway in Uruguay and elsewhere in

the region. In 1990, a Presidential decree declared that all wireless communication be licensed directly by the presidency (Alonso et al., 2010; Parlamento del Uruguay, 1990). This solidified an enduring practice whereby the regulator assures proper technical operating procedure while the presidency decides whether or not a license should be granted. Then, in 1991, the *State Corporations Act* established a technical definition for telecommunications and provided the presidency with direct decision-making powers over this broad domain as well (Alonso et al., 2010; Parlamento del Uruguay, 1991). Telecommunications, in this document, is defined as: "all transmission, emission or reception of signs, signals, texts, images, sounds or information of any sort by wire, radio, optical media or other electromagnetic systems" (Parlamento del Uruguay, 1991). Somewhat similar to the power relationships present in the Canadian spectrum policy system, enormous power is concentrated in the executive branch of government. While citizens are afforded the right to found communications media in order to facilitate free expression, the bounds of this free expression are quite limited. This tension, between a powerful executive branch that treats rights in modest if not contradictory ways, and a particularly empowered citizenry, who demand explicit recognition of rights while being willing to settle for less, is present throughout the recent history of communication policy-making in Uruguay.

While citizens may be empowered, this has not necessarily impeded efforts by the government to introduce private market reforms into the communication system. A prime example of this is the introduction of cellular telephony. With the introduction of the 1991 *State Corporations Act*, a popular referendum was organized by citizens, ultimately rejecting this new law. Nevertheless, the government still sought to open up the telecommunications market to competition. In 1992, following the defeat of

the *State Corporations Act*, Antel quietly created a secret subsidiary for cellular telephony and awarded a private contract to Aviatar S.A. (later called Movicom), today owned by Telefonica, one of the biggest multinational telecommunications companies. This, however, was illegal and the arrangement was not made public. "The public face of cellular telephony was ANTEL, but in reality it was all Movicom. Two years later, Antel began to offer cellular telephone service of its own under the name Ancel. The general public thought there were two separate companies and there were, except that juridically there was only one." (Riccardi, 2010). Eventually this arrangement ended and Movicom became Uruguay's first private telecommunications provider, publicly breaking the state monopoly on telecommunications against the will of the public.

The new millennium has been a time of broad regulatory reform in Uruguay with successive governments undertaking efforts to create regulation and legislation in communication policy, which had been consistently lacking in Uruguayan society (Riccardi, 2010). Communications regulation began with the creation of the current regulator, the Unidad Reguladora de Servicios de Comunincación (URSEC), in 2001 (Parlamento del Uruguay, 2001). Staff charged with regulating the spectrum were shifted from the Department of National Defence to this new entity and it gradually gained funding, infrastructure and responsibility, including control of the spectrum and the licensing of telecommunications undertakings (Alonso et al., 2010; Budé, 2010; Parlamento del Uruguay, 2003a, 2003b).[99] Due to the constitutional organization of the Uruguayan state, all regulatory bodies must ultimately fall within the orbit of the presidency and for this reason it is impossible to have a regulator

99 Every in-coming government must work within the preceding government's budget for one year while negotiating a new budget for the following five years. It can therefore take quite a long time to establish new regulatory bodies.

directly under the control of Parliament. In the case of URSEC, it is directly responsible to the (MIEM (with regards to communications regulation) and the Ministry of Education and Culture (with regards to regulation of the postal service) (Budé, 2010). The creation of the regulator did not necessarily mean that regulatory activities were undertaken with immediate vigour. In some respects, there was actually a loosening of policy application, especially with respect to unlicensed radio broadcasting. Before the creation of URSEC, unlicensed community radio broadcasters had been subject to organized intimidation and forced to operate clandestinely. With the development of a more extensive regulatory apparatus, these stations gradually found themselves tolerated by the regulator (Light, 2011).

While the *Broadcasting Act* of 1977 provides a general regulatory framework for radio and television, no further policy had been developed around it until quite recently. In 2008, Daniel Martinez, then MIEM, decided to begin developing a more elaborate communications policy framework. This resulted in a Presidential decree that, for the first time, provided a basic procedure for licensing commercial radio stations, (Parlamento del Uruguay, 2008a) but nothing more (Martínez, 2010). Finally, through a lengthy process initiated in 2005 which ended in 2010, community radio broadcasting was legalized, resulting in a policy framework that is uniquely elaborate in the Uruguayan context (Light, 2012a).[100] The *Community Radio Act* of 2007 created a volunteer-based regulatory commission charged with overseeing the licensing and regulation of this form of media. The Honorary Community Radio Commission – known as the CHARC – is supposed to be participatory and representative.[101] To fill this mandate it, includes members from a variety of social movements, the university sectors, and different sectors of the government

100 This process is analyzed later in this chapter.
101 CHARC stands for Comisión honoraria asesor de radiodifusión comunitaria.

(Parlamento del Uruguay, 2007). There are no representatives from the private sector. Finally, a Presidential decree issued in 2010 reserved "at least one-third of the radio spectrum in every locality, on all analogue and digital frequency bands, and all broadcast modalities" for community broadcasting (Parlamento del Uruguay, 2010). Part of the broader work informing the original proposed legislation (AMARC-ALC, 2008), this spectrum reservation was either removed from model legislation before proposal to Parliament or during debate and revision. If it had been included in the 2007 *Community Radio Act*, the act itself would have surely met political resistance. Without the inclusion of the spectrum reservation clause, the Act essentially satisfied the most powerful parties involved. Reinforcing political support on the left, the Act formally recognized community radio broadcasting. For those opposed to pirate broadcasters, the Act imposed a regulatory structure upon formerly unregulated broadcasters and mandated the regulator to shutdown those operating outside the law (Gómez, 2010). The decree reserving the spectrum was discretely made two years later, on December 30, 2010, by a new President acting, in part, on counsel of the National Director of Telecommunications, Gustavo Gómez.[102] Gómez, in a former activist role, had been responsible for the passage of the 2007 *Community Radio Act.* That said, it is difficult to discern whether this spectrum reservation is a serious proposition or political posturing. As of 2012, no transition framework had been created to assure the availability of this "third" of broadcast frequencies. Ultimately, the transition would require a re-writing of the *Broadcasting Act* of 1977 which entitles commercial broadcasters to "life-term" licenses.

While the communication and media infrastructures in Uruguay are well developed, the idea of regulating them has never quite taken hold and is thus in a perpetual state

102 The month of January is vacation time in Uruguay and all government functions either close or slow down. Thus, any complaints would have been difficult to make in any official manner.

of invention. Communications policy-making capacity has been particularly sporadic, relying either on Parliament or the presidency for occasional bursts of legislation and direction. While technical regulation of the spectrum shifted from the Ministry of National Defence to URSEC in 2001, in 2005 spectrum policy matters were still a defence matter. As a way of resolving this quickly, the office of the National Director of Telecommunications was created within the Ministry of Defence in 2005 to develop a broad range of communications policy as a civil, rather than defence, matter (Ponce de León, 2010). Demonstrating a willingness on the part of the government to seriously address communication policy-making, it nonetheless was severely under-resourced and ineffective during its first three years of existence (Martínez, 2010; Ponce de León, 2010). An initially proposed office of four was reduced to two during budget negotiations and it was decided that the post would remain essentially powerless while the Minister of Industry, Energy and Mining worked to introduce the idea of telecommunications policy into the broader political culture. This provided what was believed to be a necessary period of adaptation. According to Martín Ponce de León, then president of OSE (the state water company) and a director of Antel, creating an immediately empowered policy-maker immediately "would be like killing them" because of the political pressure. "Sending somebody to do nothing wouldn't be worth it. Sending somebody to get something done, they're not going to last" (Ponce de León, 2010).[103] Gradually the political climate began to adjust to the idea and Parliament awarded the National Telecommunications Directorate (DINATEL) the four original positions it had sought. Gustavo Gómez, former head of legislation and policy for the World Association of Community Broadcasters – Latin America and Caribbean (AMARC-ALC), was appointed National Director of Telecommunications in early 2010. Previously the driving force behind the

103 Ultimately this is what occurred and Gustavo Gómez was replaced in September 2011 (Franco, 2011).

legalization of community radio, Gómez was then given the task of developing a comprehensive legal framework for the Uruguay communication and media system. In the interim, Gómez had been advising the MIEM on how to develop and implement more comprehensive communication policy (Martínez, 2010).

In May 2010, Gómez stated that two central laws were needed: "one for telecommunications and a law for audiovisual communication services. The first will regulate the entirety of the telecommunications infrastructure and the second will regulate the services that utilize this infrastructure" (Gómez, 2010). In July of that year, the DINATEL struck a multisectorial committee to undertake the collective development of a potential audiovisual communication services law (Comité Técnico Consultivo, 2010). Following a lengthy process at times threatened with Presidential veto, current MIEM Roberto Kreimerman expects a law to be proposed in the first half of 2012 (Rodríguez, 2012).

### 5.2 The state of the spectrum in Uruguay

Although the spectrum has been used for communication in Uruguay for close to 100 years, only recently have academics and members of civil society begun to document its history, ownership, and regulatory practices. In 2003, Luis Stolovich et al. researched the five families that dominated ownership of the Uruguayan media including the press, radio and television (Barreiro, Lima, Romano, & Stolovich, 2004). Later work in that decade analyzed the regulation of the spectrum in relation to regulatory practices and concentration of ownership (Lanza & Goldaracena, 2009). Further scholarship focuses on Uruguayan media concentration in comparison with other countries in Latin America (Becerra & Mastrini, 2010), and ownership of commercial television (Lanza & Buquet, 2011). URSEC, Uruguay's communications

regulator, only began to centrally collect documentation regarding the ownership of the entities it licenses in 2009 with the passage of Resolution 717/009 (URSEC, 2009). While this data is available for public use, the regulator provides minimal analysis of it, at least for public consumption. The Canadian example in the previous chapter relied on extensive public data to quantify the distribution of spectrum licenses and framed this distribution as representative of the access of certain actors to the policy system. The current discussion relies primarily upon the analysis of others who have undertaken the difficult task of aggregating regulator data and tracing the ownership of numerous companies.

Today, Uruguay has three cellular carriers. State-owned Antel accounts for 46% of the market, Movistar (owned by Spanish multi-national Telefónica) claims 38%, and AM Wireless, known as Claro and property of Mexican businessman Carlos Slim, maintains 16% of the market. There are no standard procedures for granting cellular telephony licenses and each entity received their license in a different way. Antel, as discussed earlier, has the exclusive and democratically determined mandate to provide telephony in Uruguay. Nevertheless, it contracted a private company then known as Aviatar S.A. in 1993 to construct a cellular network. Once Antel developed its own network, Aviatar S.A. was purchased by Telefónica and a second cellular carrier (Movicom) was given legal status. AM Wireless entered in 2004 when the government decided to further open the cellular telephony market (Riccardi, 2010). The number of licenses held by each is not public information. In terms of coverage, however, Antel covers 95% of the country (El Espectador, 2012). It is assumed that the other two cellular providers have acquired the necessary licenses to offer similar service.

Since the return of democracy in 1985, commercial radio licenses have been awarded by the President in exchange for political favours and license attribution has been far from transparent (Lanza, 2010; Lanza & Goldaracena, 2009; Martínez, 2010). Broadcast licenses can be considered particularly complex political tools as they are granted forever but can be taken away at anytime, all at the discretion of the President. While this practice was ushered in during the dictatorship, no democratic government has attempted to change it. Past research has documented the attribution of 30-40 radio licenses during the Lacalle government of the 1990s (Lanza & Goldaracena, 2009, p. 240) and more than 50 licenses by the second Sanguinetti government (2000-2005) (Lanza & Goldaracena, 2009, p. 241; Lanza & Gómez, 2007). Today, there are 271 licensed commercial radio stations compared to 9 licenses held by the public broadcaster, SODRE, and 92 community radio stations (URSEC, 2012a, 2012b, 2012c, 2012d). Actions of the current government have shown modest reform in this area. In addition to introducing legislation legalizing community radio, the Presidency revoked four radio licenses from the Rupenián family and charged their company with income tax fraud. Two other radio stations also saw their licenses revoked during investigation by the Justice Department (Lanza & Goldaracena, 2009, p. 246). However, there is also suspicion that the Frente Amplio has been co-opted and, in terms of communication policy, is operating like previous right-wing governments. According to investigations undertaken by Edison Lanza, civil society organization Grupo Medios y Sociedad (GMS) and independent daily paper La Diaria, Mexican media magnet Ángel González has spent the past four years establishing a radio network, in clear violation of the foreign ownership limits stated in Uruguay's 1977 *Broadcasting Act*. In 2008, the Presidency authorized the transfer of ten licenses to González (Lanza & Goldaracena, 2009, pp. 245–247). More recently, González was documented meeting with the MIEM and has shown an ability

to side-step Uruguayan foreign ownership laws by collaborating with the government and obfuscating his legal arrangement with the radio stations in question through creating various contracts and power-sharing arrangements (Rodriguez, 2012). A similar strategy was used previously by cable television companies to disguise the creation of an oligopoly that has monopolized most of Uruguay's television market (García Rubio, 1994).

Recently, Lanza and Buquet (2011) documented the extent to which three corporations, all involved in multiple industries, have come to dominate television broadcasting, including over-the-air, satellite, and cable. These three companies, known by their television channels (4, 10, and 12) have, over the years, developed an elaborate network of over-the-air and cable television broadcasters over which they have either direct or indirect corporate control allowing them to centralize content production. Through a web of partnerships they control 95.5% of the television market in the country (Lanza & Buquet, 2011, p. 23), own numerous radio stations and are beginning to expand into the online content market (Lanza & Buquet, 2011, pp. 16–21).

The state of the spectrum in Canada and Uruguay is fairly similar, policy aside. In both cases, a false sense of diversity can be observed through simple statistical evaluation. Things don't *look* that bad. When one strips away the facade, however, the domination of the policy system, and thus of the communication system more broadly, is unavoidable. In each case, smokescreens are mounted, seemingly in an attempt to make the task of the observer that much more difficult. The remainder of this chapter will take a deep look inside the Uruguayan spectrum policy system as it stands today.

### 5.3 Law-making and participation

Laws in Uruguay originate in Parliament or by Presidential decree but there are certain mechanisms that allow for oversight and intervention on the part of the electorate.[104] Elected representatives from both houses may propose laws that are then studied in committee. If both houses agree on content, it is sent to the presidency for final approval. If they do not agree, Parliament must meet in a general assembly to collectively debate and come to final agreement on the content. The President may veto all or part of any law, but may be defeated by a vote of 3/5 of the Parliament. Presidential decrees are made by the President in consultation with his cabinet. They may only be overturned by the citizenry through referendum or plebiscite.

As in the Canadian case, proposed legislation in Uruguay is studied by specialized parliamentary committees of each house. Committees do not necessarily publish a call for comments or a notice of the hearing in advance. However, civil society organizations typically are in tune with what is happening legislatively and will often request an invitation (Yanes, 2010). Legislators will also ask people and organizations to attend. The multiple political parties that compose each commission must ultimately agree upon which witnesses to invite (Abdala, 2010).

At the constitutional level, citizens are provided with an important amount of oversight power in the form of plebiscites and referenda. Often treated equivocally, in this case they refer to two distinct political procedures (Urruty Navatta, 2009). Specifically, a plebiscite refers to a pronouncement on the part of the electorate concerning the approval or disapproval of a constitutional change. Constitutional reforms may originate through a number of Parliament-centric processes, but must

104 Both houses are elected. The law-making process is mapped out on the Uruguayan parliament website: http://mi.parlamento.gub.uy/organigrama.html.

have ultimate approval from the electorate. A referendum, in the Uruguayan context, refers to a popular vote that may alter or annul a new law, enacted either by Parliament or by Presidential decree, within one year of its initial approval (Urruty Navatta, 2009). In the case of constitutional change, signatures must be collected from 10% of the electoral body while the threshold is 25% for laws (Gallardo, 2006, p. 461). Both mechanisms have been used to various degrees and have a lengthy history. In 1980, the Uruguayan dictatorship held a plebiscite on constitutional reforms that would have given the military absolute veto power over all government policy. It was soundly defeated and this defeat was in part responsible for the end of the dictatorship and the transition back to democracy (Library of Congress, 1992). A citizens referendum in 1989 approved a law granting amnesty to all involved in armed conflict during the dictatorship period while giving the President the power to investigate illegal acts during this period (Gallardo, 2006, p. 462). Another referendum was held in 1992, successfully annulling the then-President's plan to massively privatize state services through passage of the *State Corporations Act* of 1991. This made Uruguay "the only country in the world that has been consulted on full-scale privatization and which has rejected the possibility by referendum" (Barrett et al., 2008, p. 101). In 2003, the government introduced legislation that would have opened up the state monopoly on fuel to broad competition and joint ventures with foreign partners, but this, too, was overruled by a citizen-initiated referendum (Rilla, 2006, pp. 339–340). Most recently, a collection of civil society groups successfully organized a plebiscite that effectively inserted the human right to water into the national constitution with the assurance that it may never be privatized (Santos & Villareal, 2005, p. 173). Thus, while there exists a strong executive with veto power and a strong law-making structure in the body of Parliament, legal, social and political structures permit the electorate to play the ultimate role of decision-maker, albeit with

considerable effort. The mechanisms that have safe-guarded a strong welfare state in Uruguay have in Canada only been adopted in efforts to scale back the welfare state (D. D. Barney & Laycock, 1999) and through constitutional changes affecting the composition of the Canadian state and the relationship between the provinces and the federal government, namely the Charlottetown Accord of 1992 and the Quebec referendum of 1995.

Based on my interviews with key informants and the general strategy adopted by the Frente Amplio government, it can be safely assumed that the laws underlying Uruguay's radio spectrum are ripe for revision (Gómez, 2010; Kaplún, 2009, 2010; Martínez, 2010). Indeed, many of the civil society organizations I interviewed consider the long-standing broadcasting act to be an illegitimate remnant of the dictatorship. The legislative process that produced Uruguay's most recent spectrum-oriented law, the *Community Radio Act* of 2007, can thus be seen as the beginning of a process of reform. Two further processes, the development of the *Audiovisual Services Act* and the recent public consultation on digital television held in November 2011 (DINATEL, 2012) represent the continuation of this reform. All three processes will be analyzed in the following section considering the future of communication policy-making in Uruguay.

### 5.3.1 *The Community Broadcasting Act* of 2007

Community radio broadcasting in Uruguay began largely in the 1980s following the end of the dictatorship and served as a common ground for various social movements working towards rebuilding the social fabric of Uruguayan society. Until the election of the left-wing Frente Amplio government in 2004, these stations were regularly persecuted by a government regulator (from 2001 onward this was URSEC) that often

closed them down and confiscated their equipment (Bouissa et al., 1998; Curuchet, Girola, & Orcajo, 2006; Robledo, 1998). During the presidential campaign of 2004, the Frente Amplio stated that it would legalize community radio. The process, however, dragged on until 2008. The inability of the government to quickly enact new legislation disappointed some advocates who believed there was a limited window within which it would be possible to act (Kaplún, 2005). However, Daniel Martinez, parliamentarian, leader of the Socialist Party and MIEM from 2008-2010, believes the delay was the result of an over-loaded Parliament. "Never has there been a legislative period in the history of Uruguay that had as many laws approved and that has worked as much as this previous one" (Martínez, 2010). Examining the parliamentary record, one can see that community radio legislation was introduced roughly eight months after the new government came into power in March 2005. It was then examined by two parliamentary committees between November 17, 2005 and December 11, 2007, and eventually gained Presidential approval December 22, 2007. It was studied in committee over 22 individual sessions, 16 of which included testimony from a variety of witnesses (Parlamento del Uruguay, 2012). Analyzing the consultation process and its ability to integrate a diverse variety of stakeholders will help to establish the level to which this process was successful as a step toward the political goal of "democratization", while also providing an ethical template against which future law- and policy-making processes can be measured.

| Witness Category | Number of Witnesses |
|---|---|
| Civil society | 16 |
| Regulators | 8 |
| Private sector | 8 |
| Human rights law | 5 |
| University sector | 5 |

**Table 5.1: Community radio law hearing participation, Uruguay, 2005-2007**

The composition of the witness pool and the testimony presented demonstrates a number of things. First, while civil society organizations represent the largest number of intervenors, these groups and their input are far from homogenous. As one would expect, the two associations representing community radio stations were present. One, AMARC-Uruguay, supported legislation while the other, Ecos, was opposed.[105] Other groups included Uruguay's central union PIT-CNT; the Evangelical Christian Community Radio Network; and the Uruguayan Institute of Legal and Social Studies (IELSUR), a group of lawyers that organizes around human rights and has participated in the development of various proposed laws (Prats, 2010). Three organizations of commercial radio broadcasters intervened in opposition. One commercial broadcasting representative, during an interview, displayed extreme hostility towards community broadcasting, claiming that radio is a "service of public interest" and only professional broadcasters can satisfy such a need (Inchausti, 2010).[106] (That said, "professional" is self-proclaimed by commercial broadcasters and there are no colleges or universities in Uruguay that offer training for broadcasting.) Often, commercial broadcasting organizations sent two to five representatives while civil society was represented by much smaller numbers, frequently just one person per group. Therefore, while commercial groups demonstrated "strength in numbers", civil society organizations provided a greater variety of perspectives that were nonetheless oriented in support of the proposed legislation. In addition, the entire process was "book-ended" by very specific types of legal counsel. Towards the beginning, in 2006, the Commissioner of the Inter-

105 Since their formation in the 1990s, ECOS has consistently argued that the entire media system should be overhauled. They opposed any regulation of community radio in advance of this process.

106 My interview with Rafael Inchausti of ANDEBU did not consider the question of community broadcasting. His commentary, which takes up much of the 90-minute interview, occurred independently of my line of questioning. Other commercial radio groups refused interview requests, stating that Inchausti represented their views.

American Commission on Human Rights (IACHR) of the Organization of American States, Victor Abramovich, informed the committee that the law would not create a precedent for the commission. This consideration was important as certain laws adopted in member states may create legal precedence for other members of the IACHR, obliging them to adopt similar legislation (Loreti, 2011). The same day, the UNESCO Chair for Freedom of Expression, Analia Eledias, informed the committee on how the proposed law could foster freedom of expression. Towards the end of the entire committee process, external legal counsel was invited to provide judgement on the integration of this law into the greater legal framework and a number of international human rights organizations appeared. (Parlamento del Uruguay, 2012). The *Community Radio Act* of 2007 was quite substantial. It officialized a previously illegal communication act and created a new and participatory regulatory structure. By creating the CHARC, the law purposely extended the regulatory system into the domain of civil society. While it is still the President who grants licenses, the act of regulation itself is no longer exclusively in the hands of the state.

Examination of the parliamentary record and interviews with third parties demonstrate the existence of a productive and respected extra-parliamentarian system of legislative development. The original *Community Radio Act* was crafted by a group of civil society organizations including AMARC-Uruguay, the Uruguayan Press Association (APU), IELSUR, the Universidad de la República, and the Universidad de la República communication studies program (Imaz, 2010). It benefited from the legal expertise and coordination of Edison Lanza, law and communications professor, journalist and member of APU and Gustavo Gómez. Its success was also the result of a multi-pronged strategy that included an international study on democratic broadcasting legislation and a series of public workshops

organized with the cooperation of the government and the international community (AMARC-ALC, 2008; Lanza, 2010; Light, 2011). This pattern was repeated with Uruguay's recent *Access to Information Act* of 2008, with Lanza again playing a central role (Lanza, 2010; Parlamento del Uruguay, 2008b) and displays a marked capacity for civil society to develop legislation; a recognition, perhaps, on the part of legislators that their law-making capacity is limited; and, according to Daniel Martinez, the ability of legislators to incorporate the work and viewpoints of civil society into legislation (2010).

### 5.3.2 The Honorary Community Radio Commission

The Honorary Community Radio Commission (CHARC) was created by the *Community Radio Act* of 2007. It's purpose is consultative – it reviews applications by community radio stations and then recommends to the presidency whether or not to grant licenses. The CHARC only recommends the approval of licenses; it does not have the power to shut down unlicensed broadcasters (Prats, 2010). The initial work of the Commission consisted of processing 412 applications following the passage of the law, a census of currently operating stations and a call for applications (Light, 2012a). In advance of the 2009 election, it recommended 38 of these with the intent to recommend a total of 84 (Gómez, 2010).[107] It currently has nine members including representatives from the following organizations: the Minister of Industry, Energy and Mining; the Minister of Education and Culture; Parliament; AMARC-Uruguay; Ecos; IELSUR; APU; the private university sector; and the Universidad de la República. All members are permanent except for those held by AMARC-Uruguay and Ecos in recognition that the community radio movement and its representative bodies may change (Prats, 2010). A remarkable integration of a recently clandestine

107 It is forbidden for the president to issue broadcast licenses within 6 months before and 6 months following an election.

and outlawed community into a regulatory body, the CHARC would appear, according to Gustavo Gómez, to be an exemplary model due to its participatory design (2010). Given the preceding analysis of URSEC, how does the CHARC function on the inside and what does this mean for both the democratic project of this regulatory experiment and the general effort of the government to "democratize"?

The CHARC was proposed and created as a volunteer organization with no budgetary structure, the strategy being "to take advantage of political conditions to create a tool, a defective tool but a tool all the same" (Lanza, 2010). Lack of budgetary resources seems to be the root of several other problems. While URSEC provided the commission with a meeting place, it was given no human or material resources. Eventually it was given the use of a telephone and computer. While one member believes it imperative that the commission be able to personally visit stations before approving applications (and even did so on his own time), no vehicle nor travel funds have been put at the CHARC's disposal (Orcajo, 2010). Members also spoke to me of being buried under applications and subject to direct political pressure from elected politicians whose constituents had applied for licenses. As of May 2012, the situation had not changed.

Most of the burden has been shouldered by a few members as participation by state and university actors has been poor. Parliament never appointed a representative; the Minister of Education and Culture representative has never attended a meeting; and IELSUR and the private university sector seldom participate. Conclusions of active members demonstrate that what for some may be considered a "proof of concept" has been undertaken as a labour of love. That said, in either case it has reached its limits. For Edison Lanza, it is impossible to create any sort of institutionalization without

financial resources (Lanza, 2010). Oscar Orcajo described the situation as "intolerable" and believes that the fundamental ability to satisfy the demands of the *Community Radio Act* are at risk. The lack of participation on the part of organizations that fought to attain their positions on the commission also creates problems of legitimacy and transparency (Orcajo, 2010). Martin Prats, chair of the CHARC, explained that this situation was not unique to community broadcasting and that honorary commissions had been invoked by laws concerning other areas as well (Prats, 2010). Here we find the skeleton of a bold proposition for civil society integration in regulatory reform and a group of individuals exhausted by an enormous effort as the literal cogs of democratic reform.

### 5.4 Ongoing experiments in policy reform

Following the passage of the *Community Radio Act* of 2007 and the appointment of Gustavo Gómez as National Director of Telecommunications, two further processes of policy reform have been undertaken, one of which has been completed. Each of these efforts is central to the Uruguayan government's strategy regarding convergence in that they address critical points of physical and legal infrastructure and the future of spectrum management.

#### 5.4.1 The *Audiovisual Communication Services Act*

The Technical Consultative Committee for a new *Audiovisual Communication Services Law* was convened by the National Telecommunications Directorate (DINATEL) in July 2010. The membership was quite diverse and composed of 15 private individuals, each from a broad range of private, political and university groups. Gustavo Gómez was the only state representative. Gabriel Kapún, communications professor at the Universidad de la República del Uruguay, was the

committee chair.[108] Telecommunications corporations were not represented, although Sutel, the union of ANTEL, was. The committee was initiated as a forum of discussion amongst people of diverse opinions as an exploratory first step towards developing legislation. The committee's final report clearly states that differences in opinion between members were to be "treated in a climate of dialogue and respect" (Comité Técnico Consultivo, 2010, p. 2). The committee met 15 times over a period of four months and its general theme of discussion, immediately set by Gómez, was "how to guarantee diversity and pluralism in the media: contributions to the revision and reform of the *Broadcasting Act* (of 1977) in Uruguay" (Comité Técnico Consultivo, 2010, p. 2). The goal was to determine how to go about developing a legal framework that encompasses telecommunications, television, and radio broadcasting. Given the high level of media concentration in Uruguay, recent changes in media law in neighbouring Argentina (Loreti, 2011), and the closeness of actors in both countries media reform movements (Lanza, 2010), diversity and pluralism can only be brought about through the introduction and safeguard of new and independent media actors.

As with the 2007 *Community Radio Act*, discussion here was framed by international standards for freedom of expression. Through discussions of the attribution of frequencies, it was decided that adjudication procedures must be "competitive, public, just and transparent, assuring equal opportunity and without discrimination of any sort". It was further decided that, in competitive applications, the central evaluative element should be the "communicational proposition" and that economics should play a small role in application review, as this could limit the possibility of new

108 The heads of departments, schools, faculties, etc. in Uruguay often play important roles in bringing the expertise developed inside academia into other venues.

entrants.[109] It was also noted that the Inter-American Human Rights Commission (IAHRC) considers spectrum auctions to be "anti-democratic" (Comité Técnico Consultivo, 2010, p. 4) again displaying respect for the ethical standards put forward by this international body. This is important and appears to demonstrate a desire by the policy-maker to include a broad range of actors in the development of a legislative framework in parallel with internationally recognized standards of justice. However, the complexity of this task and the incongruities of the powers at play can be seen in the composition of this committee, namely the exclusion of telecommunications providers and the inclusion of private sector actors who have made statements contrary to this goal (see the previous footnote concerning Inchausti).

As noted earlier, the media and communications system in Uruguay is highly concentrated in the hands of very few private corporations and there is a high level of cross-ownership between broadcast media and the press. Therefore, an audiovisual communication services law would need to address this situation. Ultimately, the committee agreed that a "reasonable equilibrium" should be established between the public, private, and community media sectors, again mirroring the spirit of the *Community Radio Act* of 2007. In order to satisfy this standard, limits would need to be imposed on the concentration currently visible in the private sector and the committee suggested that UNESCO's media development indicators be utilized as a model of reference (Comité Técnico Consultivo, 2010, p. 5; Unesco, 2008). To this effect, UNESCO's indicators advise the creation of laws to prevent monopoly domination of the media and monopoly cross-ownership. UNESCO also recommends laws that force divestment in order to neutralize existing concentration

109 This line of enquiry was not developed any further by the committee but would ideally include subsidies of some sort to assure that new actors can focus on facilitating communication rather than on capital accumulation.

(Unesco, 2008, pp. 33–36). Based on the incorporation of legitimate expert views embodied in international human rights bodies into the law-making process around the 2007 *Community Radio Act*, the incorporation of UNESCO's indicators do not necessarily imply a lack of ability to create domestic standards. To the contrary, this practice demonstrates a very sophisticated and engaged approach to creating such standards.

The *Audiovisual Communication Services Act* has not yet, as of June 2012, been introduced in Parliament. Should it become law, it will be, in part, the result of the discussions presented above and will be subject to further examination and debate. While too early to evaluate the ultimate role of the consultative committee, at the very least it has proposed a new space for debate and exploration while serving as an opportunity for groups who may often be opposed to one another to work collectively toward consensus. This was done in earnest, over several meetings and over a lengthy period of time. The choice to exclude telecommunications corporations, both private and public, from this consultative group may show a determination on the part of the policy-maker (DINATEL) to consider these entities primarily as providers of communication infrastructure, and an understanding that the presence of such industrial giants would surely affect the ability of a group of small businesses and civil society organizations to work together. Likewise, the absence of law-makers ensures that the process is one that will inform the subsequent law-making process rather than being the table around which the law is written. However, the choice to exclude these powerful actors may also demonstrate an effort by the National Director of Telecommunication to begin to solidify political power of his own among more familiar faces. While the committee demonstrates some general consultative potential, it is ultimately quite limited and, politics aside, should be seen more as a

tool of orientation than a form of public, democratic and representative consultation that would necessarily include the general public as opposed to a set of actors chosen by the policy-maker. That said, forging personal bonds and encouraging constructive debate among typically opposing forces can also be seen as a political strategy aimed at avoiding conflict at a later date. Ultimately, a bill of some form may be presented to parliamentary committees who will go about their loosely structured processes of consultation. While the consultative committee is certainly a novel approach to exploration and the beginning of a collaborative relationship between the policy-maker and stakeholders, it would be useful to develop a step of further consultation with the general public, the results of which could provide further insight into the desirable content of such a broad piece of legislation.

### 5.4.2 Digital television migration

The eventual migration to digital television broadcasting first entered public discourse as part of the Frente Amplio political agenda developed between 2003-2004. At this point, however, it was considered simply a subject of strategic importance that should be studied further. Gradually, digital television became a trade issue with Brazil, which developed its own technical standard and was undertaking efforts to assure that other countries in Latin America, especially its fellow trade partners in MERCOSUR, adopted it (Kaplún, 2008, p. 4). Uruguay's move towards transition has been marked by much debate and a series of false starts. In 2006, the President convened a national committee to examine the issue, largely focusing on practices undertaken elsewhere (Kaplún, 2008, p. 6). By August 2006, the President had decided to adopt the European standard, based on recommendations of this committee (La República, 2007). Eventually, the government reversed its position, officially adopting the Brazilian standard by issue of a Presidential decree in June 2011 (Parlamento del

Uruguay, 2011). Technically, there is not much of a difference between the two digital television standards and the choice was based more on geopolitics than the technical suitability of one standard over another. In adopting the Brazilian standard, Uruguay is able to take advantage the economies of scale generated by a continental market. In addition, Uruguay's software industry has been developing rapidly in recent years and tapping into a continent-wide standard would provide more potential for this domestic industry. With this selection of a technical standard finally taken care of, DINATEL put in place a public consultation on the future of digital television. This was an important opportunity to both engage with the Uruguayan public on the topic of the radio spectrum and to set in place a process capable of disrupting the monopolistic tendencies of the current media system.

Uruguay's public consultation on digital television was largely organized online and was the practical outcome of an IDRC-funded project looking at the potential for using Web 2.0 tools to engage the public on policy-making topics.[110] It was organized into two parts. The first engaged the public by recording and posting videos of interviews with various citizens on the topics of inclusion and transparency in state institutions; regulation and regulators; and uses of the radio spectrum. It included various articles and documentation about digital television,communications regulation, as well as discussion forums where citizens can debate and discuss. The second part called on citizens to submit their opinions to the Minister of Industry, Energy and Mining (MIEM) for inclusion in the decision-making process.

Ultimately, the success of this consultative tool to enhance citizen participation in

110 Entitled "Impacto 2.0", this project between the Association for Progressive Communication (APC) and Comunica (coincidentally my research partner in Uruguay) was carried out in Ecuador, Peru and Uruguay. http://impacto2.comunica.org/.

policy-making can be measured by the degree to which the substance of the public interventions was reflected in actual policy outcomes. We could also ask, who is the audience targeted by the consultation and did this audience, in fact, participate? The introduction of this tool insists that "the greatest plurality of voices appears to be a healthy thing for the democratic system and for audiences in general" while posing a number of technical questions. Finally, the designers state that "academics, politicians, government, civil society organizations and citizens will meet in the same forum" (2011). Who, then, are the active participants within the online consultation community? Whose voices are represented and whose voices are missing? Secondly, does the pool of intervenors who submitted official letters to the MIEM resemble that assembled online? Based on these factors, did the consultation successfully engage with its target audience and were the views of this audience incorporated into the making of policy?

Part One of the online consultation website consists of impromptu interviews with everyday citizens. Each is asked a series of questions about what sort of programming digital television should diffuse and whether digital television should be public or free (the commercial option is not presented). Interview subjects are a broad selection from adolescent to senior in age, and of 11 interview subjects, six are women and five are men. The group is not racially diverse, but representative of the fairly homogenous composition of Uruguayan society. It is difficult to ascertain socioeconomic status. The videos appear to have been made more as a publicity tool than as a measurable portion of the consultation process.

Part Two of the online consultation consists of a number of online discussion forums. Participants, however, were not required to provide detailed personal information,

making it impossible to undertake an in-depth analysis of these individuals and their activity. In sharp contrast to the diversity present in the videos, only two of the 24 active participants in online discussion forums clearly identify themselves as women while 22 clearly identify as men. In addition, all informational documents (which are accompanied by a photo of each author) are written by male experts. Thus, while the target audience may have been diverse in video representation, ultimately a small group of men (some obviously experts, some obviously not) express their views on the future of television and regulation.

While the online consultation was developed by both the Fundación Comunica and the DINATEL, an analysis of public submissions to the official consultation process demonstrates a certain disconnect between the two steps of this process.[111] The breakdown is as follows:

| Intervenor type | Number of intervenors |
|---|---|
| Non-expert | 9 |
| Expert | 7 |
| Commercial entity | 7 |
| Community/municipal | 3 |

**Table 5.2: Digital television consultation, Uruguay, 2011**

An obvious effort was put into the online Web 2.0 consultation tool; it is well designed with easily accessible information. However, both pieces of the consultation process were unveiled with a one-month deadline for submissions. This limited time period, coupled with the complexity of the topic, presents an important barrier to substantive public participation. For instance, AMARC-Uruguay submitted a two-page brief (which is critical of the short time delay) while that of ANDEBU is 20

111 Digital television consultation submissions: http://www.miem.gub.uy/gxpsites/hgxpp001?5,11,549,O,S,0,PAG;CONC;485;2;D;8179;1;PAG;MNU;E;30;9;MNU;,.

pages long. While non-expert citizens makeup the largest number of intervenors, several briefs begin with or include the phrase "I am not qualified to submit an analysis of the proposed law or decree but here is what I think". It appears the online tool was created with two goals in mind: to mobilize citizens to intervene in this consultative process; and to provide citizens with the knowledge they need to participate substantively. Based on the content of submissions, however, these things did not occur and the process as a whole remained dominated by experts and commercial entities. Recent research has shown that the consultation process was fundamentally broken when, in mid-process, Gustavo Gómez was replaced, demonstrating perhaps the extent to which a consultation of this sort was associated with an individual rather than wholly integrated into the policy-making approach of the government (Beltramelli, Alonso, & Steibel, 2012)

Digital television policy will ultimately be defined in one of three possible ways. If tradition proves more powerful than the impetus for reform, it will be defined as a law by parliamentary process or through Presidential decree. If, however, DINATEL is to evolve as a policy-maker responsible for developing and implementing communication and media policy in Uruguay, digital television policy will be created as just that: policy. In this way, it could be made more accessible to a public that has the ability to engage directly with a responsible regulatory entity rather than through a legislative process that citizens do not appear to engage with in the first place (at least according to the available evidence). If the current government's goal of "democratization" is to reach the depths of communication policy-making, it will need to put more effort into making the machinations of policy-making transparent, democratic, accountable and accessible at their point of inception. Up to this point, the new structures for public participation appear to be experiments more than mature

and capable tools.

**Addendum:** The President of Uruguay, José (Pepe) Mujíca, introduced Uruguay's digital television broadcasting law on May 11, 2012. Ultimately it was issued by presidential decree, a process that makes it difficult to ascertain the exact origins of the content of the law as it was ultimately crafted behind closed doors. The bill provides for the following: 21 digital television channels have been designated for Montevideo, the capital city. Seven will be for public television (a combination of national and municipal broadcasters), seven will be for commercial television (existing analogue broadcasters will migrate to digital), and seven will be for community broadcasters. In the cities and towns other than Montevideo (which are much smaller), the distribution of channels is similar but adjusted to 9 per locality given the lower population. In addition, one digital television channel has been designated for use by the national television broadcaster (TV Nacional) throughout the rural interior of the country. The legislation introduces important changes for the licensing of television broadcasters. First, in order to gain access to a digital channel, each existing analogue broadcasters must respond to a call for applications. With this new license comes a term limit of 15 years after which the station must apply for renewal. The legislation also requires digital television broadcasters to provide equal airtime to all political candidates, free of charge, during election campaigns. Finally, it gives ANTEL the legal ability to enter into the digital television market on its own or in collaboration with TV Nacional (Government of Uruguay, 2012).

Shortly after the introduction of the digital television broadcasting law, ANDEBU (the association of commercial broadcasters) announced that they would be officially challenging it. According to Rafael Inchausti, president of ANDEBU, the

broadcasters to not agree with the imposed term limit (until now licenses have been granted indefinitely), and interpret the need to provide equal airtime to political candidates as an unjust "tax" (El Pais, 2012).

### 5.5 Participation in the existing policy system

The communication policy system in Uruguay today consists of two primary entities: the National Telecommunications Directorate which exists as a policy-maker and URSEC which is the regulator. While the previous sections have explored the law- and policy-making process with an eye to the future, this section focuses on the current system, how it has been constructed, and the experiences of individuals inside it, outside it and those operating in a foggy space in between.

#### 5.5.1 Regulator? Who, me?!

While it is usually noted that URSEC was formed in 2001, the reality is in fact more complicated. Rather than create a regulator in 2001, the technical group responsible for the radio spectrum within the Ministry of National Defence was simply moved elsewhere in the institutional hierarchy of the state, now answering to the Minister of Industry, Energy and Mining. It did not gain its own reformulated organizational structure until 2008 and in the meantime relied on numerous staff "on loan" from ANTEL to meet its needs. In May 2010, URSEC was still experiencing severe staffing shortages. Having been granted 145 positions during budget negotiations in 2005-2006, only 85 were filled by 2010. Additionally, although Uruguay received World Bank financing to strengthen their telecommunications regulator and hired PricewaterhouseCoopers to undertake their executive hiring process, two of the four most senior management positions remained vacant, including the legal department (Riccardi, 2010). It's historic lack of resources has meant that while it is a regulator,

URSEC wields no palpable power. According to the Chief of Radio Frequencies, broadcast licenses have only been revoked twice – this because in the twenty years since the licenses had been granted, neither station had engaged in a single act of broadcasting (Budé, 2010). In addition, although an estimated 300 illegal FM radio broadcasters operate in the metropolitan area of Montevideo alone (Gesuele, 2010) the regulator has only two trucks at their disposal to monitor unlicensed broadcasting.[112] This lack of ability to punish, an act often seen as central to the ability to regulate, has led to a certain lack of socialization on the part of the regulator; URSEC simply does not exist in the public consciousness (Riccardi, 2010). The situation is not unique to URSEC, though, and other regulatory institutions are equally odd cases. The central bank was founded in 1967 but isn't seen to be a financial regulator (Riccardi, 2010). Other institutions continue to exist to regulate water and energy industries, even though the privatization of these industries has been reversed, meaning that state institutions essentially regulate state monopolies (Ponce de León, 2010; Riccardi, 2010).

URSEC manages all use of the radio spectrum in Uruguay. While the presidency may grant television and radio broadcast licenses, URSEC, in fact, takes care of the rest by managing and granting cellular telephone licenses, CB radio, satellite, etc (Budé, 2010; Riccardi, 2010). In a divide not unlike the situation in Canada, use of the spectrum is managed by two separate yet connected entities, each subject to its own particular forms of political pressure. Lobbying is known to occur here (Imaz, 2010), but more widespread is a kind of political power very much connected to wealth, political parties and media ownership (Yanes, 2010).

112 Montevideo is a city of 1.5 million people. The broadcasters are generally small unlicensed commercial or religious radio stations. Aldo Gesuele, a community radio activist and radio aficionado, has been documenting these stations since 2009. Regulators were unaware of their presence, but not surprised by it either.

No matter the new processes introduced by the creation of the CHARC, URSEC undertakes no public hearings regarding the licenses that it does administer. This is not because such a thing is impossible, but because "nobody ever wanted it that way. Quite simply, it's a political decision" (Budé, 2010). In addition, unlike the case of Canada, Uruguay has no system for domestic consultation regarding ITU policy decisions (Budé, 2012). Ultimately, the spectrum is regulated in a number of locations, each closed to public intervention.

### 5.5.2 Regulator? What regulator?

To date, community radio stations are the only civil society organizations that come into regular contact with URSEC. Those within the pool of individuals interviewed with the most knowledge concerning the regulator are individuals sitting on the CHARC either as representatives of community radio associations or NGOs whose work revolves around freedom of expression. Generally, their perception is that URSEC does not have the resources to be an effective regulator and because of this they do not have the competence needed to carry out their work successfully (Lanza, 2010; Prats, 2010). URSEC is entirely inaccessible to both civil society organizations and the general public with neither staff nor other types of resources available or dedicated to working with either (Fernandez & Almeida, 2010; Imaz, 2010; Prats, 2010). In addition, there is a strong belief that URSEC is permanently co-opted by the presidency. For example, early in its existence, it was understood that URSEC was assembled in order to to open the telecommunications market (Lanza, 2010; Molina, 2010). However, as political winds have changed, its task has been reoriented to assure a competitive marketplace and a strong state telecommunications corporation (Jurado, 2010; Molina, 2010).[113]

113 I attempted multiple times to interview the current president of ANTEL, Carolina Cosse, leading up to her political appointment in 2010. Eventually scheduled, Cosse cancelled the interview at the

URSEC's lack of status as a "respected" regulatory institution ultimately has to do with fundamental questions of democracy, transparency and political will. It thus touches quite pointedly on a subject that people tend to avoid in Uruguay – the anti-democratic tendency to centralize discretionary executive power (Lanza, 2010). Yet while politics may slow down cycles of change, other realities also affect the ability of regulators to emerge - chief among them issues of education and finances. Shortly after the creation of URSEC, Uruguay experienced a severe economic crisis that saw its currency devalued, massive emigration and sudden growth in extreme poverty (Departamento de Historia del Uruguay, 2008). At the same moment that the state lost massive financial resources, it also lost a large number of educated professionals. Multiplying the problem is the fact that Uruguay's universities do not necessarily have programs set up to equip and educate professionals who could be qualified to work for a telecommunications regulator (Riccardi, 2010). This phenomena is not isolated to URSEC and can be seen in the case of water regulation as well (Genta, 2010).

### 5.6 Obstacles to democratic evolution

Since the left came to power following the 2004 elections, Uruguay has been undergoing a process of profound change in the use of wireless communication technology. In 2005, during my first visit to this country, I knew two people with cellular telephones – a Canadian and an American. Today, there are more cellphones than people and almost every adolescent has a laptop with Wi-Fi. The community radio stations I was researching in 2005 were underground, today many are licensed and broadcasting online. There are over 270 licensed commercial radio stations, over 300 illegal broadcasters and over 400 groups of people that have applied for community radio licenses. This in a country of 3.4 million people. The radio

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last minute.

spectrum occupies a special place here, literally replicating the social fabric that exists in flesh, bone and voice.

While the need to communicate "over-the-air" by various means evolves at breakneck speed, Uruguay's ability to regulate the spectrum remains minimal, obtuse, and ultimately undemocratic. This is not for lack of trying, but fundamentally due to the inability to identify and rectify glaring and established obstacles to democratic practice. The most important obstacle is that of unchecked executive power and its ultimate ability to rule the airwaves by Presidential decree. Safe-guarding the spectrum in such an opaque and politicized location works against all efforts to set it free, to see it regulated in a transparent, democratic and just manner. Yet such issues are not simply spectral; they speak to the reality of a society still very much in democratic transition, no matter its lofty discourse, vibrant political sphere and exemplary demonstrations of participatory governance.

Regulation does not need to only be the purview of experts and ultimately oriented towards profit. Undertaken in a truly democratic, transparent, participatory, and *consistent* manner regulation is the means to assure that a common good is shared equitably and justly. For such a thing to happen, though, those with power and those in search of power must somehow come to find a way forward based on collaboration rather than competition. Some parts of the story told here march in this direction but they appear to do so more as experiment than respected practice. That said, these experiments are perhaps an initiation to a further phase in a process of democratization and should thus be seen as examples to learn from, in Uruguay and elsewhere. If democratic practice is to be replicated and refined along the entire chain of the communication policy system, it must begin with a solid foundation in

the basic structure of the political and legal system of a country. Otherwise, as seen throughout this chapter, attempts at reform, no matter how well intentioned, will continue to find themselves powerless. Ultimately, these attempts at reform are experiments of the political left in power for the first time, trying to alter a legacy that, in terms of communication policy, has been the corrupt antithesis of the democratic apparatus that is in some ways avant-garde. Yet while growing pains may be a valid excuse in the beginning of reform, two years into their second mandate, the left appear to have adopted certain practices of the right. The state has fallen victim to the seemingly greater powers that dominate spectrum policy worldwide. As with the Uruguayan water movement, it will be up to civil society and citizens to recognize the spectrum as their own and to make it so.

**Conclusions and propositions**

This sixth and final chapter finds itself – at the time of writing in June 2012 – framed by unique political circumstances that speak to the issues of democracy, participation and communication that are at the heart of this thesis. Canadians are currently governed by a federal majority accused repeatedly of stifling fundamental debate within Parliament and limiting the access of citizens to government information. On June 4, over 500 "environmental groups, corporations, and other political commentators" simultaneously blacked out their websites in an act of protest in opposition to the government's efforts to stifle environmental voices through measures contained in a proposed budget bill (CBC News, 2012). Shortly afterwards, opposition MPs proposed over 1000 amendments to this same bill as a means of forcing public debate on its content (Payton, 2012). Provincially, Québec cégep and university students (including myself) are striking in opposition to the provincial government's decision to increase tuition by 75% over the next five years. After over three months of strike, failed negotiations, and hundreds of demonstrations, the Québec government introduced legislation imposing severe limits on free speech and the freedom of assembly (Robitaille, 2012). In each case, governments have attempted to introduce dramatic changes to broad-reaching legal frameworks without the use of any form of public consultation. The Occupy Wall Street movement, which began in the U.S. and spread throughout Canada and many other countries, has demonstrated even broader dissatisfaction with the ability of democratic governments to represent the interests of citizens on an on-going basis. The Occupy movement is also linked to some of the central topics of this thesis as it speaks to the exclusion of non-expert voices and values from the regulation of national and international monetary systems - technical devices many believe central to modern society (Klein, 2011). Sometimes characterized as a continuation or amplification of the anti-

globalization movement that began to take aim at new regulatory venues such as the World Trade Organization (WTO) in 1999, the Occupy movement insists that our political systems disproportionately represent a small minority of individuals and that this is unjust in the context of democracy (Klein, 2011). Ultimately these social movement happenings beg the question: Does the decision-making role of a citizen really end at the ballot box? If not, how do we develop and implement practices that both facilitate and ensure the responsiveness of government and the ability of citizens to understand, debate and communicate their thoughts in ways that are more effectively connected to the exercise of political authority?

This thesis traces the history of humankind's social relationship with the radio spectrum as a communication medium, demonstrating the origins of numerous approaches to understanding the spectrum and the ways in which these approaches have been incorporated into the spectrum policy system. The treatment of spectrum policy is holistic and considers a broad range of communication practices including radio and television broadcasting, cellular telephony, and community wireless networks. My theoretical and methodological approaches are rooted, in part, in the political economy tradition of communication research, and seek to present a cartography of the spectrum policy system that incorporates multiple histories and perspectives pertaining to the spectrum's use. With the spectrum as the focal point, the first half of this thesis explores an interweaving history of ideas, scientific exploration, geo-politics and communication technology. Through this history, I charted the development of opposing forms of communication practice and social organization with regards to the use of the radio spectrum. I demonstrated how the dominant juridical and economic forces of today originate in the 19$^{th}$ century and I illustrated the extent to which, from this early period, the spectrum has been a point

of regulatory collaboration for government and private industry while it has been largely kept out of sight of the greater public. The history of spectrum use is thus framed by the efforts of government and private enterprise to utilize wireless communication technologies as a means of social control or direction (for instance, as a tool for constructing national identity, developing ideas of regulatory legal and technical authority) and for the creation of monetary value (through the ownership and sale of the means of communication). Throughout the history of the use of the spectrum for communication, however, many social movements have resisted these dominant forces by appropriating the means of communication and using them for precisely that end. The spectrum, I assert, is today central to our ability to communicate, to be active political agents in society and for this reason its use and regulation should be subject to practices that meet the highest democratic standards – participatory, transparent and accountable.

The politics of the spectrum, as demonstrated through the two case studies presented here and in the preceding historical and theoretical treatments, are not as well defined as such a tidy phrase would suggest. More often than not, "the politics of the spectrum" are presented as an easily explained systematic and administrative structure, an innocuous and logical flow-chart. An application enters the bureaucratic chain and a radio or television station or cellular or wireless broadband provider pops out the other. As sets of regulatory frameworks, policies and laws that attempt to guide (or respond to, or enforce) the ever-changing relationships between humans and human feats of engineering, the politics of the spectrum are the result of necessarily social processes. As such, they are prone to reflect the power relations evident in the broader political and social systems in which they are entrenched. The first two chapters of this thesis explore, generally, the ways these processes have unfolded since

the mid-1800s. While I documented the important place of individual actors and social movements that have worked to propose and promote alternate visions of the spectrum, its management and its use, I clearly demonstrated that the extent of their influence has been quite limited. Historically, the spectrum has been the realm of technical, political and economic experts, generally excluding citizens from fundamental debate. Today it is highly contested territory and while it may – as a medium of communication – be of mutual interest to all, the management of the spectrum is in fact founded on conflict, couched in the more innocent term of competition. That said, sitting at the crossroads of convergence, our societies have the opportunity to ensure that our future communication networks are built upon ethical, rather than simply economic and conflict-riven, grounds. As this thesis has shown, this requires a fundamental reconfiguration of the ways in which the spectrum is thought about and regulated.

The case studies utilized in this research project serve to illustrate the conflictual nature of spectrum policy today and tie this status to regulatory systems that provide inadequate mechanisms for public participation. Indeed, in many of the venues examined, the public has little or no opportunity for effective participation in decision-making. As documented throughout these pages, this stands in stark contrast to the long history of collaboration and cooperation between governments, regulators, and telecommunications and broadcasting corporations. Developing spectrum-oriented communication systems under such conditions greatly limits the range of possible technical and regulatory outputs as it tends to incorporate the priorities of a small range of actors. Throughout the history of the electromagnetic spectrum as a communication medium, the parameters of use and regulation have been built upon seemingly unquestioned assumptions that serve to further entrench the status quo.

The spectrum is a limited natural resource; because the spectrum is scarce, its use must be heavily managed. If wireless communications systems are to function well, use of the spectrum must be heavily regulated by the State. The monetary value of the spectrum persists because, like gold, it is considered to be scarce. Unlike gold, however, the spectrum is not innately scarce in its quantity. In and of itself it is limitless. Our ability to use it is not - especially within the current regulatory parameters that function according to exclusivity. Although the practice may well challenge established regulatory and industrial practices, it is possible to share radio frequencies, thereby using the spectrum more efficiently. In Chapter One, I showed how the concept of spectrum sharing can be traced back to the 1940s and focused on a number of community-based movements and other initiatives that have adopted this strategy in more recent years. Increasingly, the development and use of technology that permits us to share the spectrum is bleeding into the mainstream with the support of high-tech start-ups and non-traditional telecommunications corporations such as Google (Google Talk) and Microsoft (Skype). According to a recent United States presidential advisory committee presentation on the subject, spectrum sharing technology "could potentially increase efficiency by a factor of 40,000" (Chen, 2012). Clearly such a thing could have a radical effect on the future of spectrum policy and communication practices. Powerful corporate actors may lend clout to such a proposition but it is equally, if not more important, that the future of such ideas be decided upon collectively and publicly.

The case studies of Canada and Uruguay demonstrate a number of obstacles that impede the possibility of introducing fundamental change into each nation's spectrum policy system. One of the most substantial problems that exists in each system is the regular use of smokescreens by corporate actors. A smokescreen is "something said

or done to conceal the truth".[114] In the current context it is the practice taking advantage the regulatory system and its reporting mechanisms in order to conceal or obscure unjust practices from public view. In both the Canadian and Uruguayan cases, a cursory glance gives one the impression that there is diversity amongst the participants in law- and policy-making processes, diversity in the distribution of spectrum licenses, and diversity in the ownership and control of the entities that hold these licenses. When one digs deeper, however, it becomes evident that this superficial diversity obscures the concentrations of power that persist at fundamental levels throughout the relevant systems. While participatory law-making and policy-making processes may exist, not all participants are treated equally, nor do these processes operate according to equal and transparent standards. In Uruguay, the creation of loosely defined ownership and content-sharing networks allows for economic and administrative control of television stations by a tripartite oligopoly. As shown in Chapter Four, two of Canada's largest telecommunications corporations collaboratively operate a shell company allowing them to "hoard" spectrum and to manipulate the wireless broadband market rather than use it to provide a communications infrastructure. Would these practices and the resulting concentration of spectrum licenses exist in a climate of transparency and participatory, responsive and responsible democracy?

**Institutionalizing Participatory Access**

As noted in Chapter One, sharing the spectrum – treating it as a commons – is an inherently political act, especially given the historical and current trends I, and others, have documented. Far from a disorderly rule-less approach to spectrum management, it is one that demands participation on the part of the users, designers, and regulators

114 Collins English Dictionary - Complete & Unabridged 10th Edition. 2009

of wireless technology. As shown in the first two chapter of this thesis, the spectrum has been shared in different ways during different times in history. Today, the most pervasive method of spectrum sharing is through the use of unlicensed spectrum for the provision of Wi-Fi. To move beyond this simple arrangement to a broader treatment of the spectrum as a commons requires that public participation be considered and integrated as a central part of any law-making or policy-making process. In both case studies presented here, public participation in the making of spectrum policy is considered a technique employed at the discretion of those managing consultative processes. As I have shown, no standard exists in Canada or Uruguay for how and when to engage in public consultations nor what actually constitutes meaningful participation. The creation of such a standard would provide a much needed ethical and democratic template for the making of communication law and regulation and more generally. While the Canadian and Uruguayan cases are each unique in terms of traditions of political participation, introducing such an approach to law- and policy-making would serve to reinforce the broad democratic frameworks upon which each country is founded.

The first step towards facilitating the institutionalization of public participation is to demonstrate the inadequacies of the current system to those who are in control of it and to those affected by it, and to determine if the political will to bring about such change exists (Hicks & Buccus, 2009). While this thesis documents these inadequacies in the spectrum policy systems of Canada and Uruguay, the determination of existing political will with respect to introducing profound change into these systems is a further project. Nevertheless, based upon the analysis I have provided thus far, certain recommendations can be made that may aid in a practical process of introducing the change that I believe is needed in the spectrum policy

system. First, much could be gained through the introduction of basic policy frameworks and guidelines for public participation. It appears that currently, consultative processes are re-invented every time they are undertaken, making it difficult to compare these processes and their outcomes to one another. The provision of frameworks and guidelines that would be applicable from the level of law-making through policy-making would render these activities more accessible and transparent. Second, it would be helpful to determine both the interest of civil society organizations in introducing such fundamental change into the political system and their capacity for undertaking such work. In Chapter Two, I looked to commons-related social movements outside the realm of communications in order to draw out strategies for re-conceptualizing the spectrum as a something fundamental to social, political, and economic life. Proposing the institutionalization of public participation would similarly provide an opportunity for diverse civil society organizations to work together to democratize the Canadian and Uruguayan political systems in important ways. Such an approach would also allow the organizations examined in this thesis, many of whom do not have the operational capacity to undertake such a project on their own, to cooperate with and learn from other members of civil society.

For too long the politics of the spectrum have been dominated by a destructive discourse of "us versus them" that unnecessarily pits members of society against one another. There is much at stake today with critical debates on concentration of media (and medium) ownership, foreign ownership and convergence either currently taking place or on the horizon. So, too, are there many opportunities to open our social, political and technical communications networks to an ethos of sharing and collaboration. The life-force that is the electromagnetic spectrum, if it is to be rendered accessible to all in its borderless expanse, must be met by a political

structure that goes beyond simplistic dichotomies, a political structure capable of true and continuous dialogue, inclusion, and fundamental change.

Earlier in these pages, I proposed the epistemological strategy of life-media as a new way to go about understanding and embodying the politics of the spectrum and I provided examples of social movements that have undertaken similar tasks. To propose new ways of thinking is at the very least a beneficial philosophical exercise but what about the real, immediate, palpable world. How might these words, thoughts, and inspirations become actions? What use is this tome you have just finished reading if it remains just that? Throughout the numerous interviews I conducted with users of the radio spectrum and individuals active within the spectrum policy system, I sought to determine the extent to which "different" conceptualizations of the spectrum exist. What I learned is that, unequivocally, most people who use the spectrum and are engaged in activism around it don't know the first thing about it. Of all the civil society organizers I spoke with in Canada and Uruguay, only one was able to explain exactly what the spectrum is and to then engage critically with his explanation (Stevenson, 2010). Coincidentally, this individual is also pursuing his PhD in communication at the University of Toronto. Of all the law and policy-makers I spoke with, only the telecommunications engineers were able to address the subject of the spectrum in a similar manner. Thus, the knowledge gap is not merely one that exists between "experts" and "amateurs" but is

instead widespread even within the very bodies that make the laws and policies that govern the spectrum and our relationship to it. Knowledge about the spectrum exists largely technical, specialized to a state of distant rarefaction.

The extent to which actors within the spectrum policy system and those that interact with it lack substantial knowledge about their primary object of orientation demonstrates an important and widespread educational problem. Indeed, the capacity of society to think about the spectrum in, not just a new way, but in *any* way at all, is more limited than I had ever imagined. If my observations, analyses and judgements are to find a role outside the bounds of the written pages of the *academe*, they must first be aimed at addressing this fundamental problem. Stay tuned.

# Annex A: Ethics certificate

UQÀM
Université du Québec à Montréal

CIEREH
Comité institutionnel d'éthique de la recherche avec des êtres humains

**Conformité à l'éthique en matière de recherche impliquant la participation de sujets humains**

**Le projet de mémoire ou de thèse suivant est jugé conforme aux pratiques usuelles en éthique de la recherche et répond aux normes établies par le Cadre normatif pour l'éthique de la recherche avec des êtres humains de l'Université du Québec à Montréal (1999) et l'Énoncé de politique des trois Conseils : éthique de la recherche avec des êtres humains (1998).**

**Nom de l'étudiant(e) :** Evan Light
**Programme d'études :** Doctorat en communication
**Directeur de recherche :** Carmen Rico de Sotelo
Professeure
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Adresse courriel (2) : evan@theotherthing.org

**Titre du projet :** *Tracing New Public Spaces in Governance : A Comparative Analysis of Water and Electromagnetic Spectrum Governance in Uruguay and Canada..*

Le présent certificat est valide jusqu'au 22 janvier 2011*

Président du Comité institutionnel d'éthique
de la recherche avec des êtres humains

Signataire autorisé: Joseph Josy Lévy, Ph.D.
Professeur
Département de sexologie
Faculté des sciences humaines

Date : 22 janvier 2010

*Date de la remise du rapport d'avancement du projet à des fins de reconduction du certificat : 5 janvier 2011 ( (http://www.recherche.uqam.ca/ethique/humains-suivi-continu.htm)

## Annex B : Interviews

### Successful interviews, Canada

| Subject | Organization |
|---|---|
| Lawson Hunter | former executive vice-president and COO, Bell Canada; telecommunications lawyer |
| François Côté | Sécretaire general, Association des radios communautaires (du Canada) |
| Dennis Dawson | Liberal senator, chair of standing committee on transportation and communication; former telecommunications lobbyist |
| Michael Lenczner | Founding member, Île sans fils (Montréal wireless group) |
| Martin Bougie | Directeur general, Association des radiodiffuseurs communautaires du Québec |
| Michael Lithgow | founding member, Canadian Association of Community Television Users and Stations |
| Serge Cardin | Bloc Québecois, spokeperson on telecommunications, science and technology |
| Pascal Lebel | Parliamentary assistant to Serge Cardin |
| Freya Zaltz | Board member, National Campus and Community Radio Association |
| Karen Bakker | University of British Columbia, director of Program on Water Governance, expert on Canadian water governance |
| Christina Cook | University of British Columbia, PhD student, expert on fragmentation of water legislation |
| Three representatives | Three representatives of Industry Canada who remain anonymous |
| Shelley Robinson | Executive director, National Campus and Community Radio Association |
| John Harris Stevenson | Expert in telecommunications and broadcasting policy |
| Marc Garneau | Liberal MP and technology critic |
| Anonymous | CRTC |
| Ian Morrison | Spokeperson, Friends of Canadian Broadcasting |
| Meera Karunananthan | Water campaigner, Council of Canadians |
| Francine St-Laurent | Member, Eau Secours |

**Unsuccessful interview attempts, Canada**

| Individual | Organization | Role |
|---|---|---|
| Michael Craig | CRTC | Manager -Radio Policy and Applications |
| Mike Amodeo | CRTC | Radio Policy |
| Namir Anani | CRTC | Executive Director, Policy Development and Research Institute |
| John Traversy | CRTC | Executive Director, Telecommunications |
| Paul Vaccani | Industry Canada | Director, Broadcasting Engineering Directorate |
| Cathy Edwards | CACTUS | founder |
| Roger Poirier | Radio Advisory Board of Canada | General manager |
| Keith McIntosh | Canadian Wireless Telecommunications Association | staff liaison, spectrum policy committee |
| Donald Neil Plett | Senate | Standing Committee on Transportation and Communication |
| Gary Schellenberger | MP, Chair of committee | Standing Committee on Canadian Heritage |
| Charlie Angus | MP | Standing Committee on Canadian Heritage |
| Michael Chong | MP, Chair of committee | Standing Committee on Industry, Science and Technology |
| Michael Masse | MP | Standing Committee on Industry, Science and Technology |
| Marc-André Sénéchal | Department of Canadian Heritage | Senior Policy Analyst, Legislative, Industry and Regulatory Policy |
| Philip Cheeseman | Department of Canadian Heritage | senior policy analyst |
| | Canadian Association of Broadcasters | |

**Successful interviews, Uruguay (Part 1)**

| Date | Subject | Organization |
|---|---|---|
| 10-2-19 | Gustavo Fernandez | ECOS Federación de Radios Comunitarias del Uruguay |
| 10-2-19 | Ricardo Almeida | ECOS Federación de Radios Comunitarias del Uruguay |
| 10-2-22 | Isabella Antonaccio | Cámara Uruguaya de Tecnologías de la Información |
| 10-2-22 | José Imaz | AMARC-Uruguay |
| 10-2-23 | Ana Laura Rivoir | Facultad de Ciencias Sociales, Sociología, Universidad de la República |
| 10-2-23 | Álvaro Gascue | Licenciatura en Ciencias de la Comunicación |
| 10-2-26 | Héctor Budé | URSEC |
| 10-2-26 | Pablo Abala | Cámara de representantes |
| 10-3-3 | Horacio Yanes | Camera de representantes |
| 10-3-4 | Marcel Achkar | Facultad de Ciencias, Geografía, Universidad de la República |
| 10-3-8 | Maria Selva Ortiz | Comision Nacional para el derecho a agua y vida |
| 10-3-9 | Martin Prats | IELSUR |
| 10-3-16 | Pablo Khalil | PIT-CNT |
| 10-3-18 | Gabriel Molina | Sutel |
| 10-03-23 | Daniel Jurado | Antel/Sutel |
| 10-3-25 | Rafael Inchausti | ANDEBU |
| 10-3-31 | Gabriel Kapĺun | Director, Ciencias de la comunicacion, Universidad de la Republica |
| 10-4-6 | Edison Lanza | Member of CHARC; communications professor at Universidad Católica; lawyer |

**Successful interviews, Uruguay (Part 2)**

| Individual | Organization | Role |
|---|---|---|
| 10-4-6 | Daniel Martinez | Ex-minister of Industry, current Senador |
| 10-04-09 | Adrián Reffo | Centros MEC |
| 10-4-12 | María Simón | Deputy minister of Education and Culture |
| 10-4-13 | José Acuna | Telecommunications engineer, Universidad de la Republica |
| 10-4-15 | Oscar Orcajo | Member of CHARC; communications professor, Universidad de la Republica |
| 10-4-23 | Adriana Marquisio | Ffose (water authority union) |
| 10-04-26 | Martin Ponce de Leon | OSE & Antel |
| 10-05-04 | José Luis Genta | DINASA |
| 10-05-06 | Adriana Riccardi | URSEC ( Manager, Regulatory Planning and Research Division |
| 10-5-13 | Gustavo Gomez | National Director of Telecommunications |

## Unsuccessful interview attempts, Uruguay

| | | |
|---|---|---|
| José Carlos Mahía | Camera de represententes | Comision de Educación y Cultura; Especial Comision de Innovación, Investigación, Ciencia y Technología |
| Federico Casareto | Camera de represententes | Comision de Educación y Cultura |
| Sandra Etcheverry | Camera de represententes | Comision de Industría, Energía y Mineria; Comision especial de poblacion y Desarrollo Social |
| Carlos Varela Nestier | Camera de represententes | Comision de Industria, Energia y Mineria |
| Beatriz Argimon | Camera de represententes | Especial comision de Innovacion, Investigacion, Ciencia y Technologia; Especial comision de Poblacion y Desarrollo Social |
| Silvana Charlone | Camera de represententes | Especial comision de Poblacion y Desarrollo Social |
| Doreen Javier Ibarra | Camera de represententes | Especial comision de Poblacion y Desarrollo Social |
| Liliam Kechichian | Camera de represententes | Especial comision de Poblacion y Desarrollo Social |
| Ruperto Long | Camera de senadores | Comision de Ciencia y Technologia; Comision de Educacion y Cultura |
| Eduardo Lorier | Camera de senadores | Comision de Educacion y Cultura |
| Gustavo Penades | Camera de senadores | Comision de Educacion y Cultura |
| Margarita Percovitch | Camera de senadores | Comision de Educacion y Cultura |
| Susana Dalmas | Camera de senadores | Comision de Industria, Energia, Comunicacion, Turismo y Servicios |
| Issac Alfie | Camera de senadores | Comisión de Industría, Energía, Comercio, Turismo, Servicios |
| Carolina Cosse | ANTEL | President |
| | Dedicado (wireless telecom) | |
| | Camera Uruguaya de Technologia de la Informacion | |
| | RAMI (rural commercial radio) | |

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